Appendices A-J

Stand-Alone Data Document

2016

JAN 03 2017

Jaxter

Former J.H. Baxter & Co. Wood Treating Facility
Arlington, Washington

Prepared for

U.S. Environmental Protection Agency

Region 10 1200 Sixth Avenue Seattle, WA 98101

Submitted by

J.H. Baxter Team

P.O. Box 10797 Eugene, OR 97440

December 2016

Prepared by

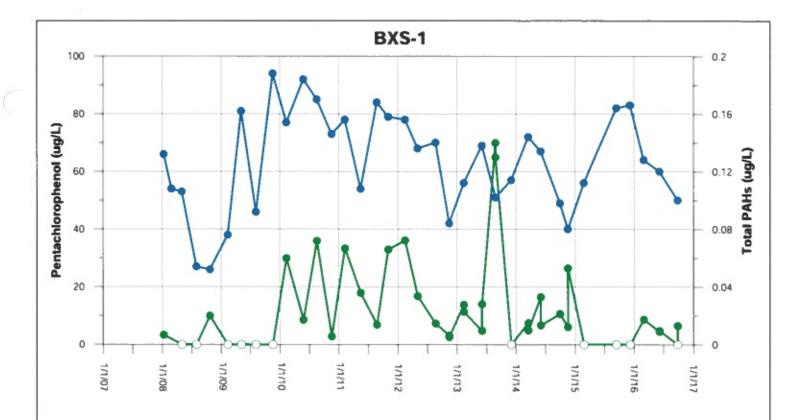


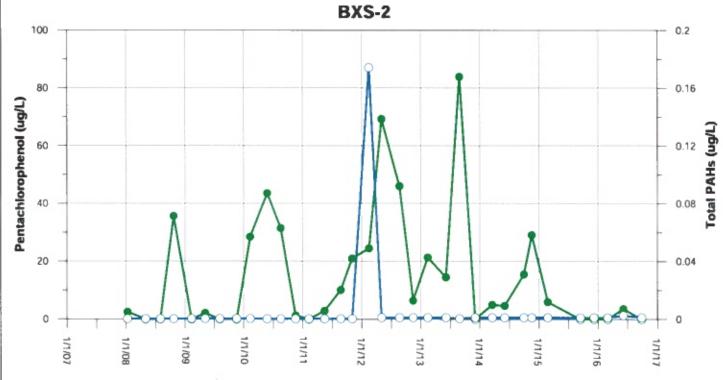
VS VX control Merel, Suide 800 - Portland OR 97/04 P StM 200-5790 - E StG 249-8920 info-grows core - Gross gross core



Appendix A

Time Series Plots: Pentachlorophenol and Total PAHs in Groundwater



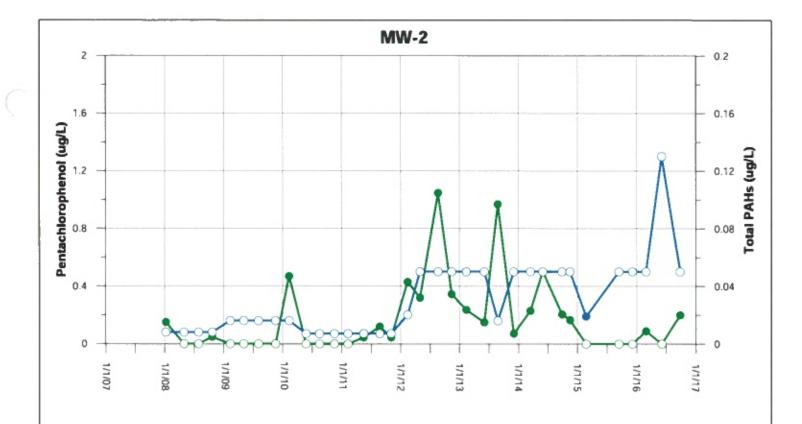


Legend: Pentachlorophenol Detected Values Pentachlorophenol Non-Detected Values Pentachlorophenol Non-Detected Values Total PAHs Detected Values Total PAHs Detected Values Former J.H. Baxter Wood Treating Facility Arlington, Washington

Notes:

Total PAHs Non-Detected Values





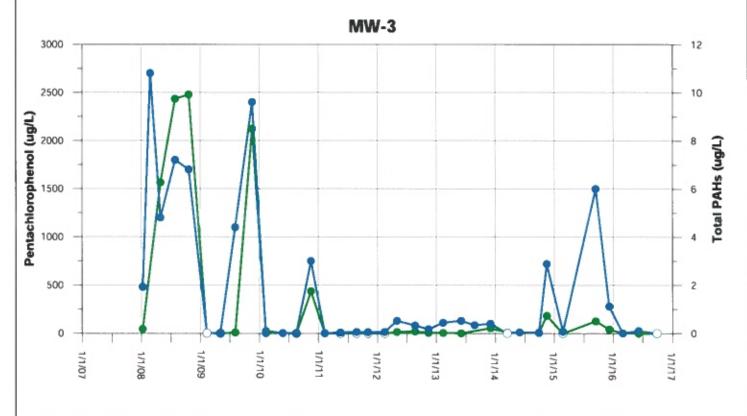
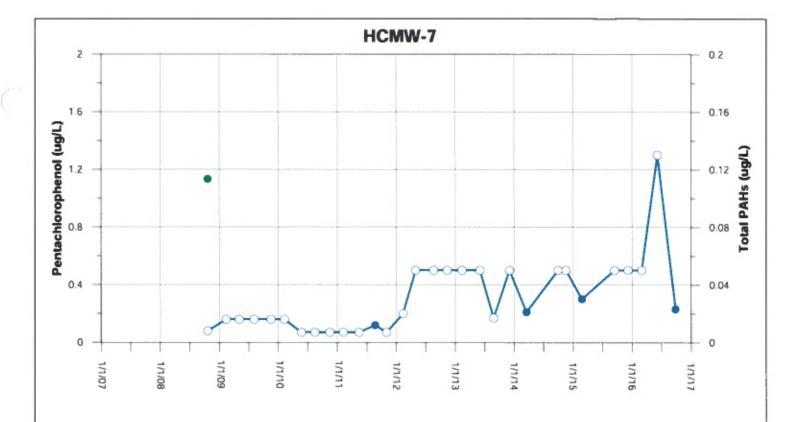
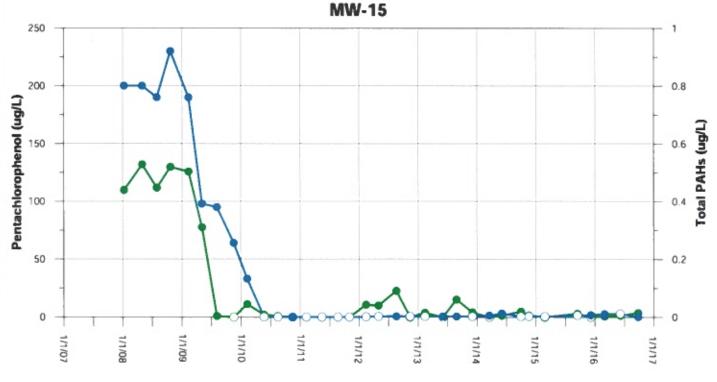


FIGURE A-2 Pentachlorophenol Detected Values Pentachlorophenol Non-Detected Values Pentachlorophenol Non-Detected Values Total PAHs Detected Values Total PAHs Non-Detected Values Total PAHs Non-Detected Values Former J.H. Baxter Wood Treating Facility Arlington, Washington

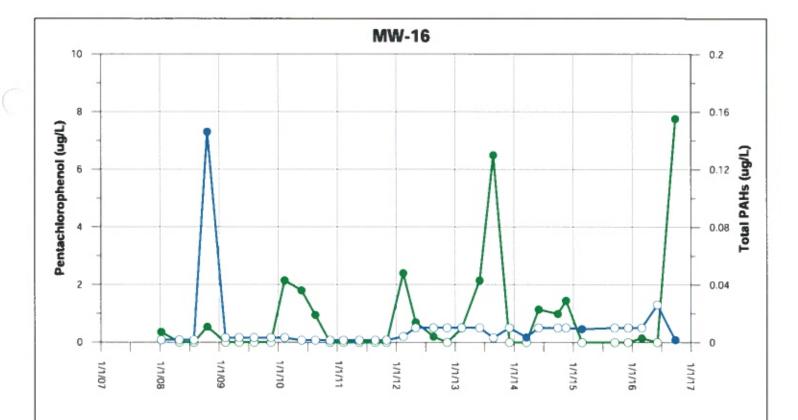
Notes:

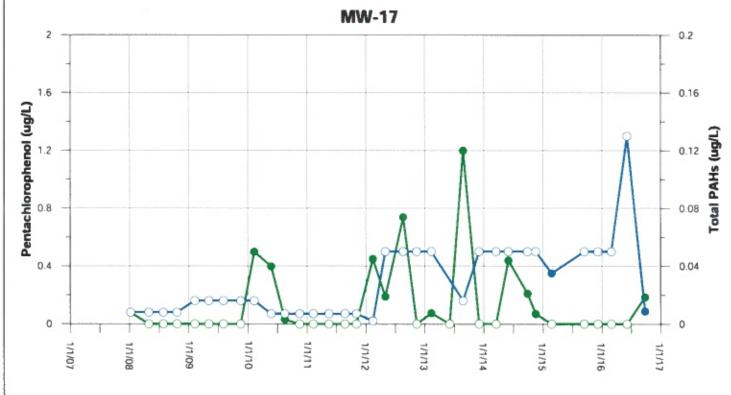






Legend: **FIGURE A-3** Pentachlorophenol and Total PAHs Groundwater Pentachlorophenol Detected Values Concentrations in HCMW-7 and MW-15 Pentachlorophenol Non-Detected Values Former J.H. Baxter Wood Treating Facility Arlington, Washington Total PAHs Detected Values Total PAHs Non-Detected Values Notes: SI Water Solutions, Inc.

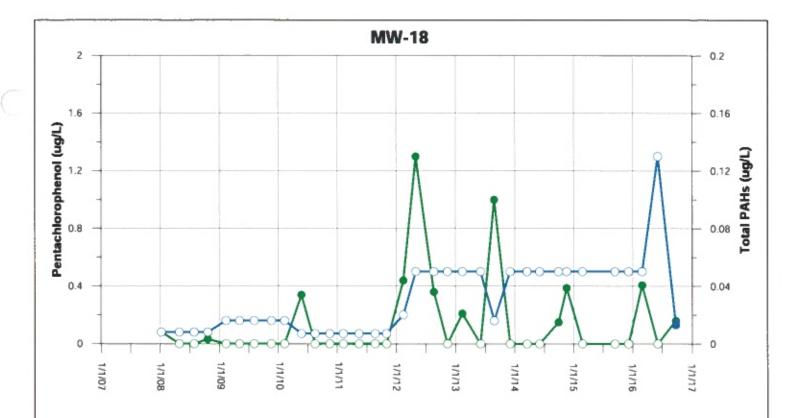




Legend: Pentachlorophenol Detected Values Pentachlorophenol Non-Detected Values Pentachlorophenol Non-Detected Values Total PAHs Detected Values Total PAHs Non-Detected Values Total PAHs Non-Detected Values Total PAHs Non-Detected Values

Notes:





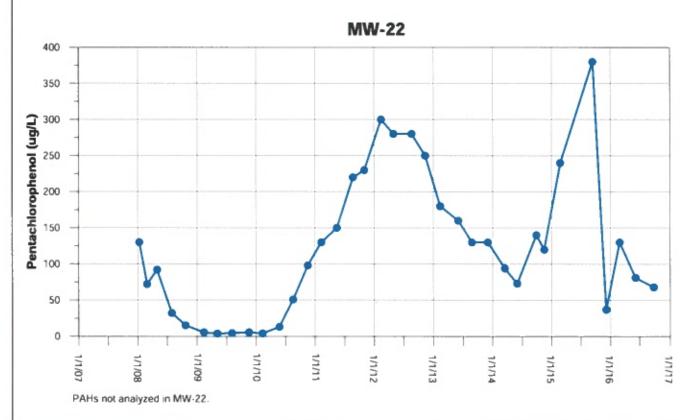
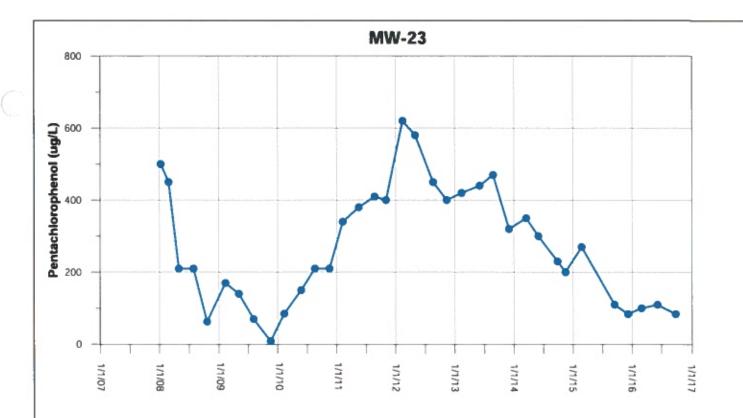
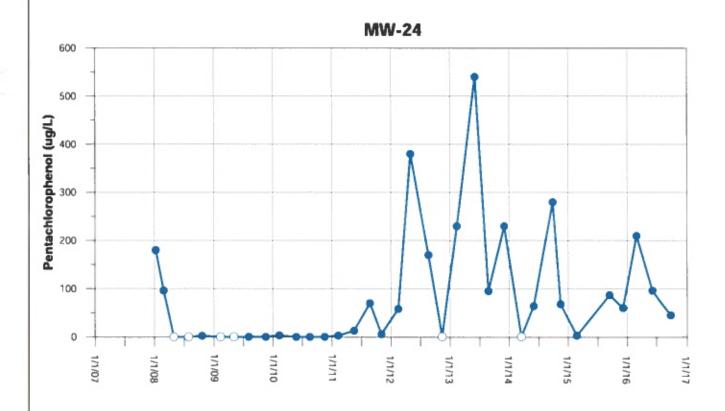


FIGURE A-5 Pentachlorophenol Detected Values Pentachlorophenol Non-Detected Values Pentachlorophenol Non-Detected Values Total PAHs Detected Values Total PAHs Non-Detected Values Total PAHs Non-Detected Values Total PAHs Non-Detected Values

S Water Solutions, Inc.

Notes:





Pentachlorophenol Detected Values

Pentachlorophenol Non-Detected Values

FIGURE A-6

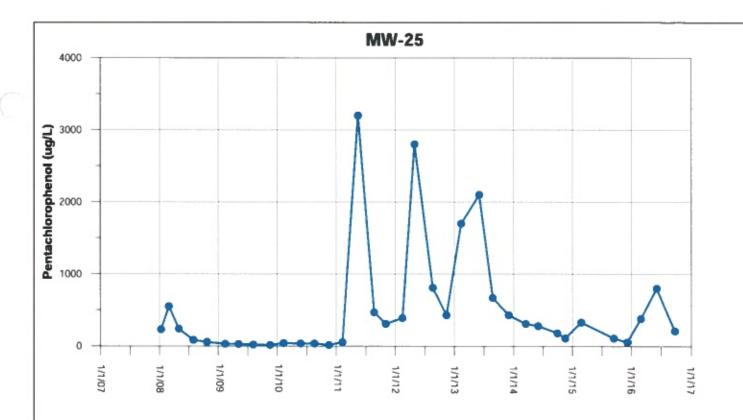
Pentachlorophenol Groundwater Concentrations in MW-23 and MW-24

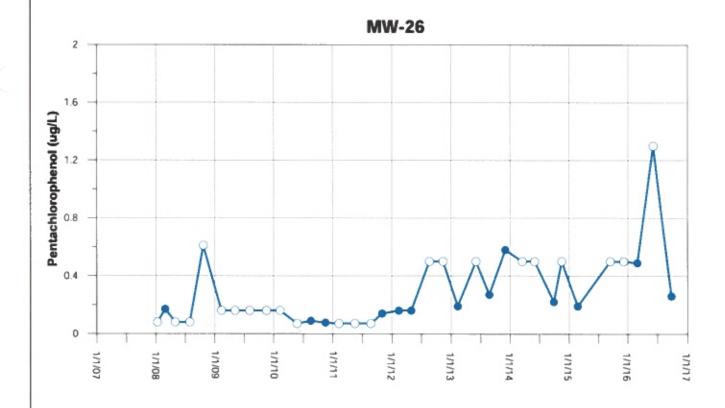
Former J.H. Baxter Wood Treating Facility Arlington, Washington



GSI Water Solutions, Inc.

Notes:





Pentachlorophenol Detected Values

Pentachlorophenol Non-Detected Values

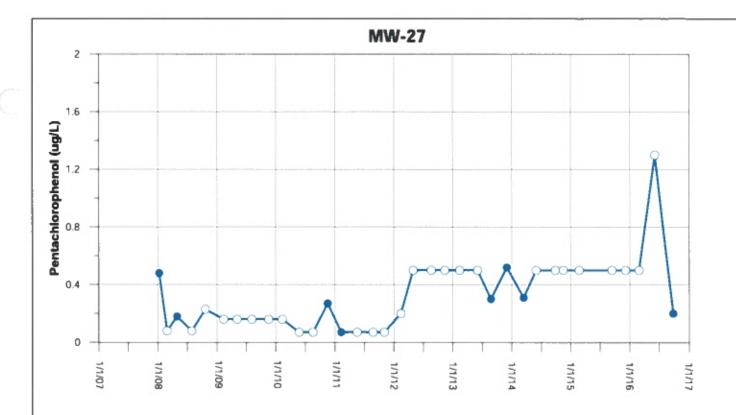
FIGURE A-7

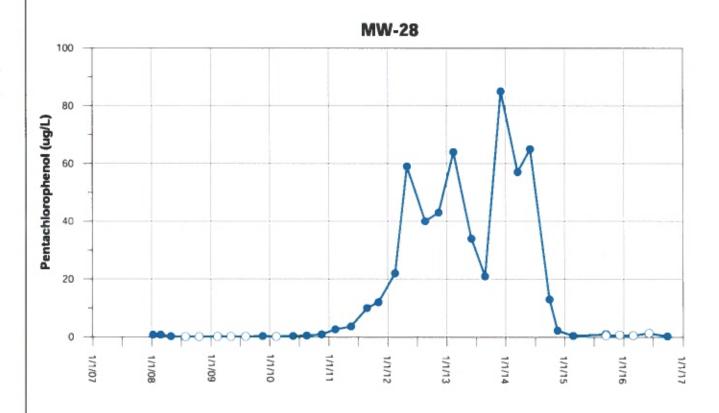
Pentachlorophenol Groundwater Concentrations in MW-25 and MW-26

Former J.H. Baxter Wood Treating Facility Arlington, Washington



Notes:





Pentachlorophenol Detected Values

○ ŧ

Pentachlorophenol Non-Detected Values

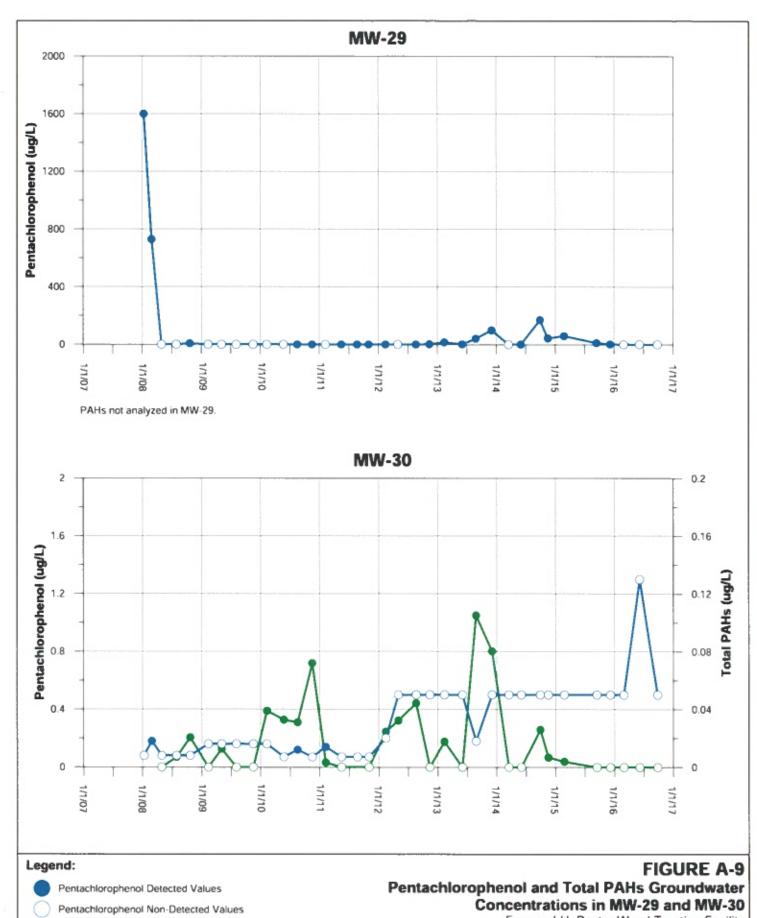
FIGURE A-8

Pentachlorophenol Groundwater Concentrations in MW-27 and MW-28

Former J.H. Baxter Wood Treating Facility Arlington, Washington



Notes:



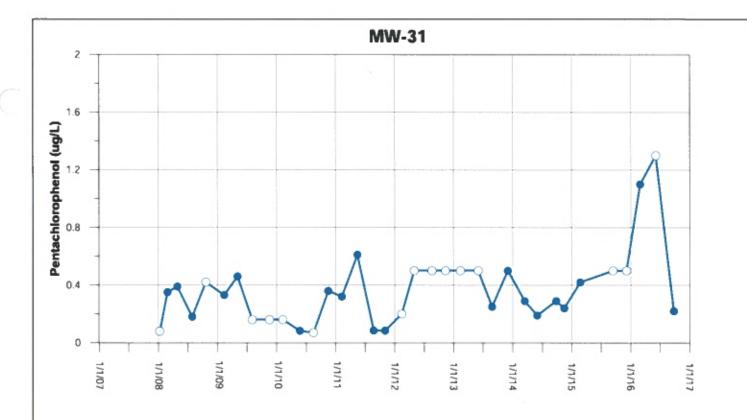
Total PAHs Non-Detected Values Notes:ug/L = microgram per liter

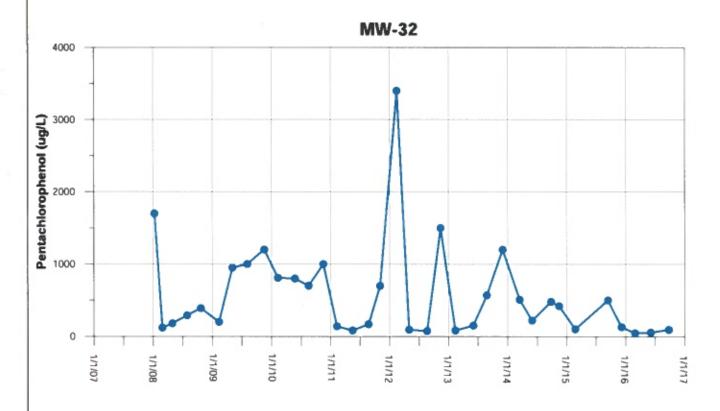
Total polycyclic aromatic hydrocarbons (PAHs) equals the sum of detected analytes (ND = 0).

Total PAHs Detected Values

Former J.H. Baxter Wood Treating Facility Arlington, Washington







Pentachlorophenol Detected Values

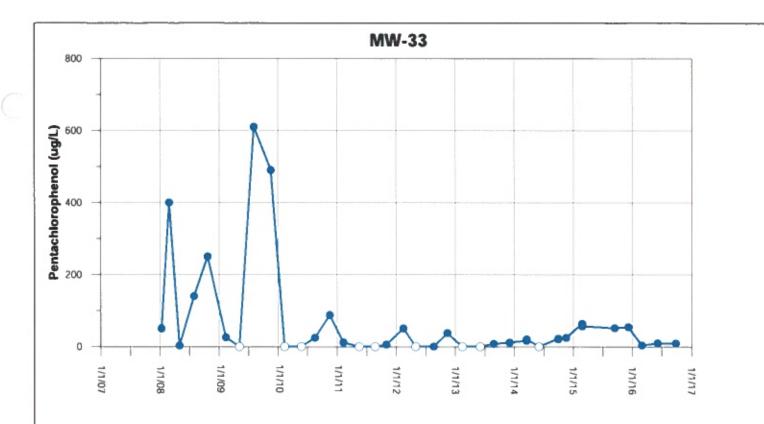
Pentachiorophenol Non-Detected Values

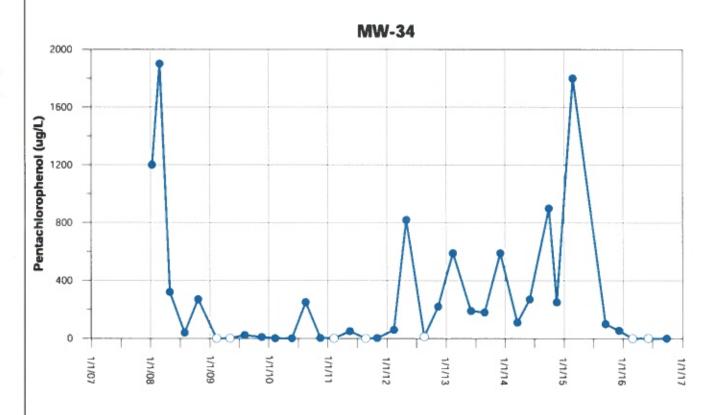
FIGURE A-10

Pentachlorophenol Groundwater Concentrations in MW-31 and MW-32

Former J.H. Baxter Wood Treating Facility Arlington, Washington







Pentachlorophenol Detected Values

Pentachlorophenol Non-Detected Values

FIGURE A-11

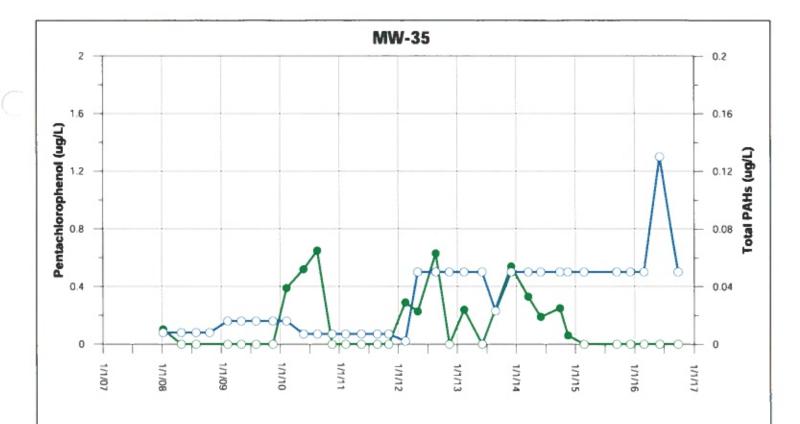
Pentachlorophenol Groundwater Concentrations in MW-33 and MW-34

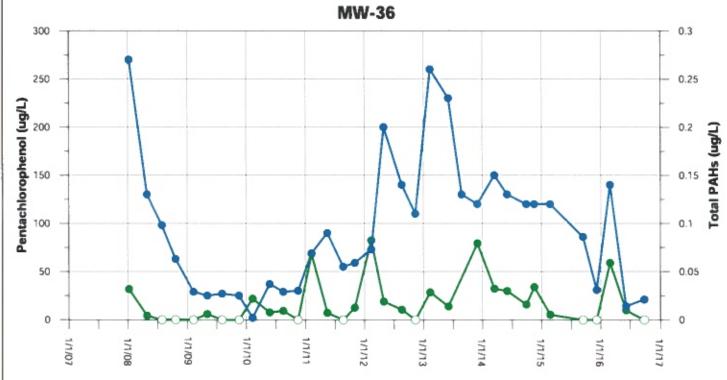
Former J.H. Baxter Wood Treating Facility Arlington, Washington

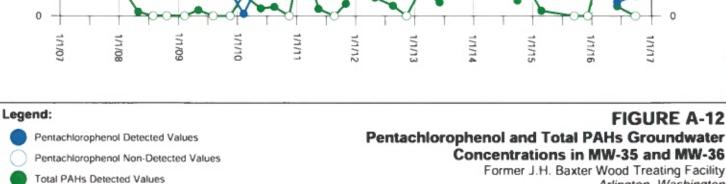


GSI Water Solutions, Inc.

Notes:







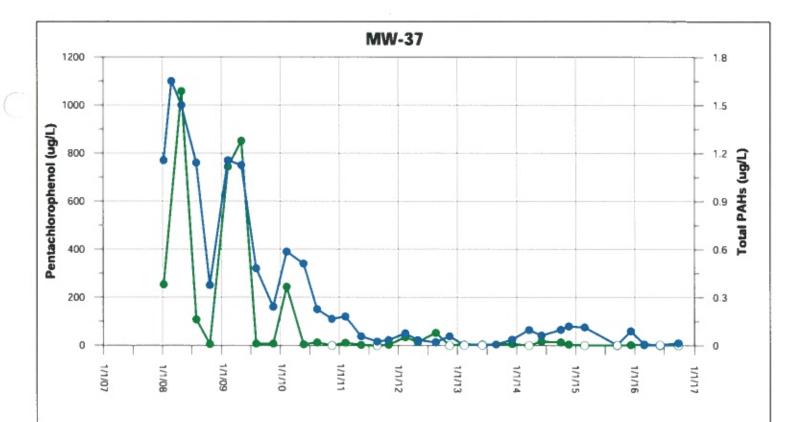
Notes:

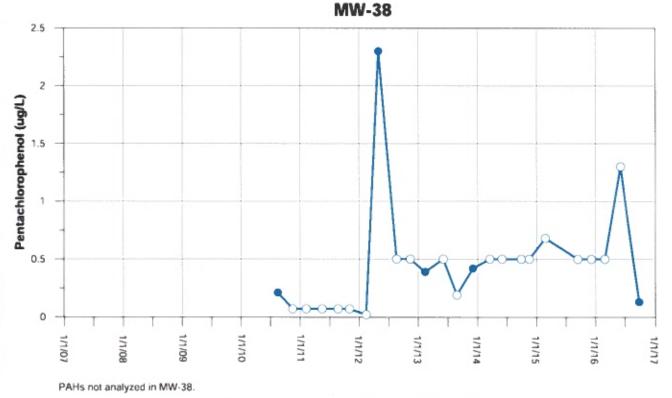
Total PAHs Non-Detected Values

ug/L = microgram per liter Total polycyclic aromatic hydrocarbons (PAHs) equals the sum of detected analytes (ND = 0).



Arlington, Washington



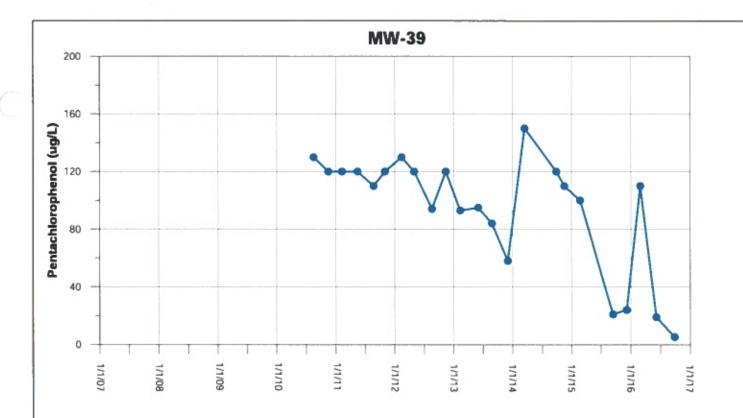


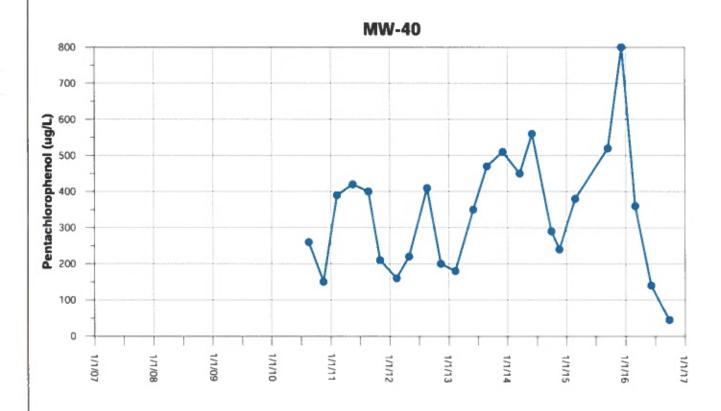
PAHs not analyzed in MW-38. Legend: Pentachlorophenol Detected Values Pentachlorophenol Non-Detected Values Pentachlorophenol Non-Detected Values Total PAHs Detected Values Total PAHs Detected Values Pattername Total PAHs Groundwater Concentrations in MW-37 and MW-38 Former J.H. Baxter Wood Treating Facility Arlington, Washington

Notes:

Total PAHs Non-Detected Values







Pentachlorophenol Detected Values

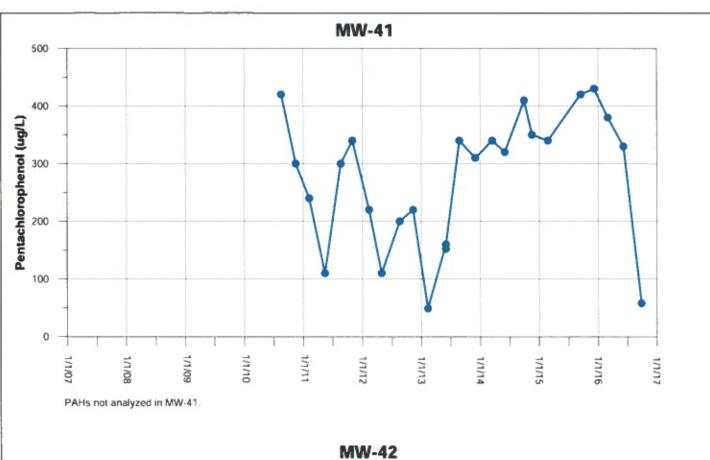
Pentachlorophenol Non-Detected Values

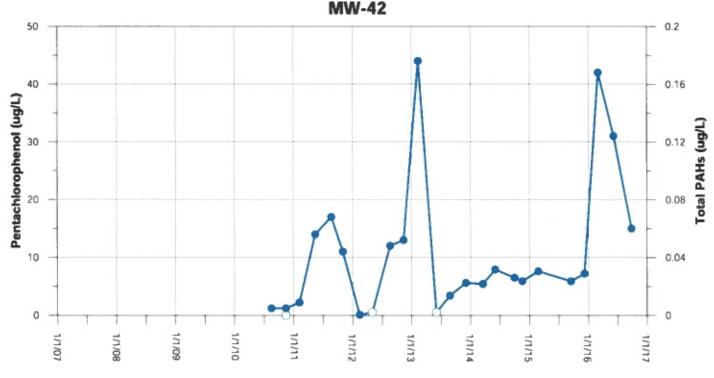
FIGURE A-14

Pentachlorophenol Groundwater Concentrations in MW-39 and MW-40

Former J.H. Baxter Wood Treating Facility Arlington, Washington









Total PAHs Non-Detected Values

Notes:

Pentachlorophenol Non-Detected Values

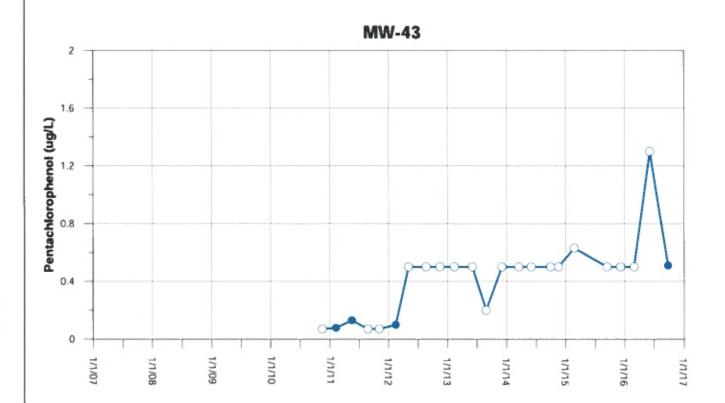
Total PAHs Detected Values

ug/L = microgram per liter Total polycyclic aromatic hydrocarbons (PAHs) equals the sum of detected analytes (ND = 0)

Pentachlorophenol and Total PAHs Groundwater Concentrations in MW-41 and MW-42

Former J.H. Baxter Wood Treating Facility Arlington, Washington





Pentachlorophenol Detected Values

Pentachlorophenol Non-Detected Values

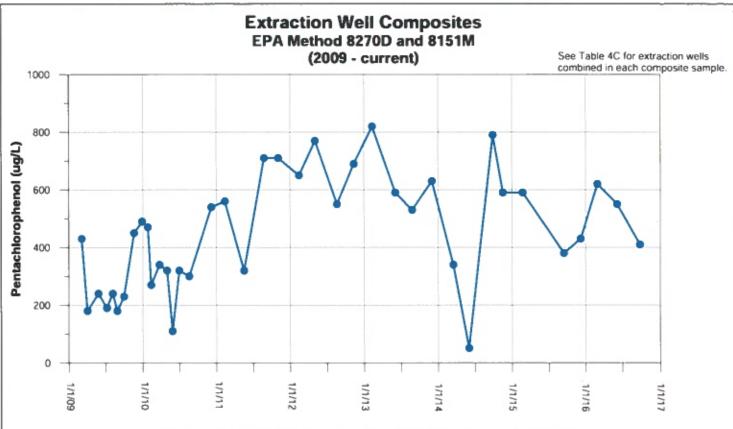
FIGURE A-16

Pentachlorophenol Groundwater Concentrations in MW-43

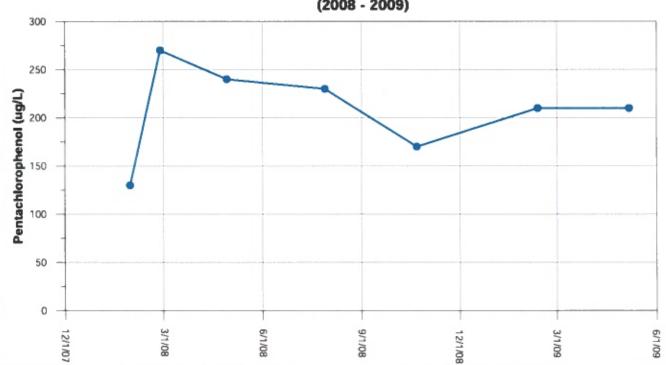
Former J.H. Baxter Wood Treating Facility Arlington, Washington







Extraction Well Composites (EW-1 through EW-7) EPA Method 8151 (2008 - 2009)



Legend:

Pentachlorophenol Groundwater Concentrations in Extraction Well

Pentachlorophenol Non-Detected Values

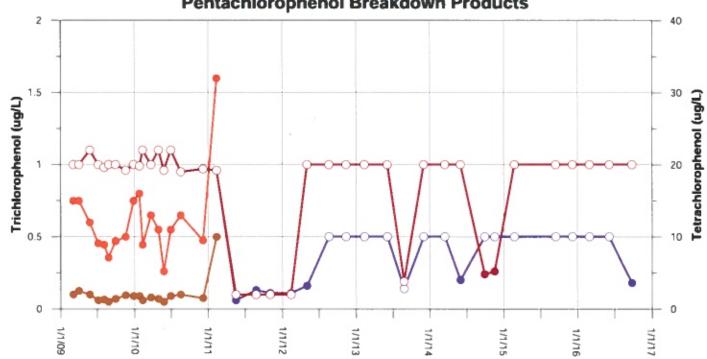
Composite Samples by EPA Method 8270D and 8151
Former J.H. Baxter Wood Treating Facility
Arlington, Washington



FIGURE A-17

Pentachlorophenol Detected Values

Extraction Well Composites Pentachlorophenol Breakdown Products



Legend:

2,4,5-Trichlorophenol Detected Values

2,4,5-Trichlorophenol Non-Detected Values

2.4,6-Trichlorophenol Detected Values

2,4,6-Trichlorophenol Non-Detected Values

2,3,4,6-Tetrachlorophenol Detected Values

2,3,5,6-Tetrachlorophenol Detected Values

FIGURE A-18

Pentachlorophenol Breakdown Products Groundwater Concentrations in Extraction Well Composite Samples

Former J.H. Baxter Wood Treating Facility
Arlington, Washington

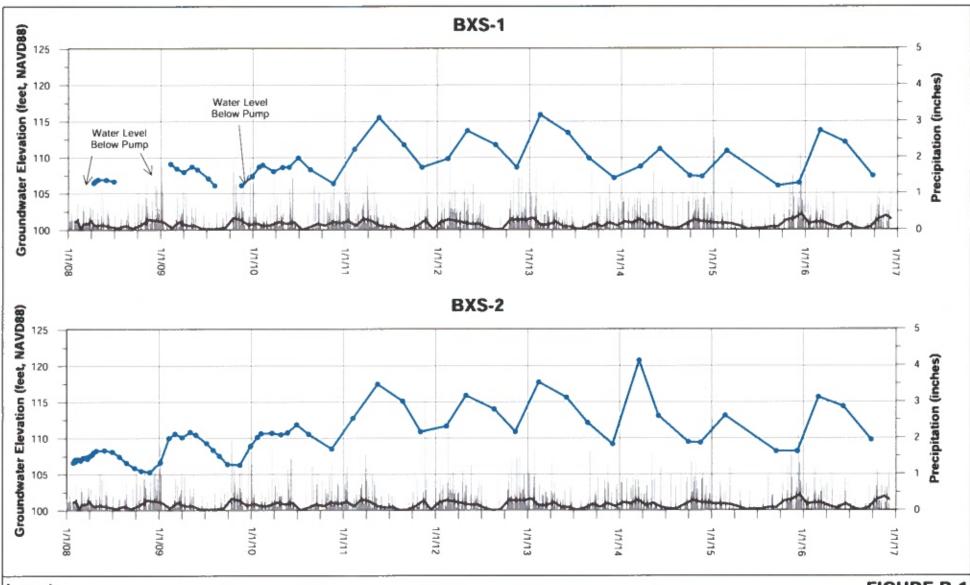
Notes:

ug/L = microgram per liter Analyzed by EPA Method 8270D and 8151M See Table 4C for extraction wells combined in each composite sample



Appendix B

Groundwater Hydrographs



Groundwater Elevation

Daily Precipitation

Average Monthly Precipitation

FIGURE B-1

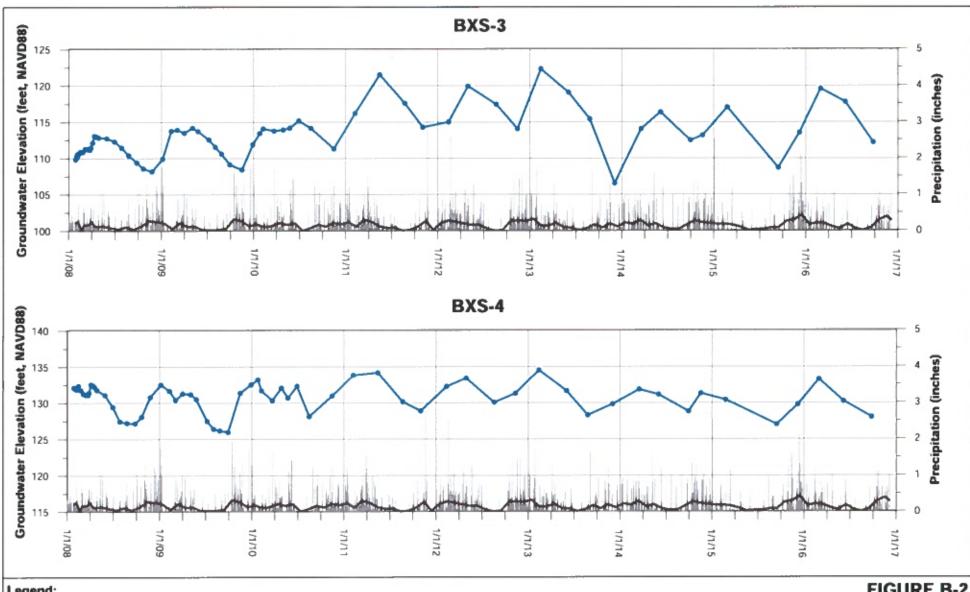
BXS-1 and BXS-2 Hydrographs with Precipitation Former J.H. Baxter Wood Treating Facility

Former J.H. Baxter Wood Treating Facility Arlington, Washington

Notes:

Precipitation data source is the National Climatic Data Center (NCDC) Arlington, Washington Station 450257. Precipitation includes rain and/or snow melt.





Groundwater Elevation Daily Precipitation

Average Monthly Precipitation

FIGURE B-2

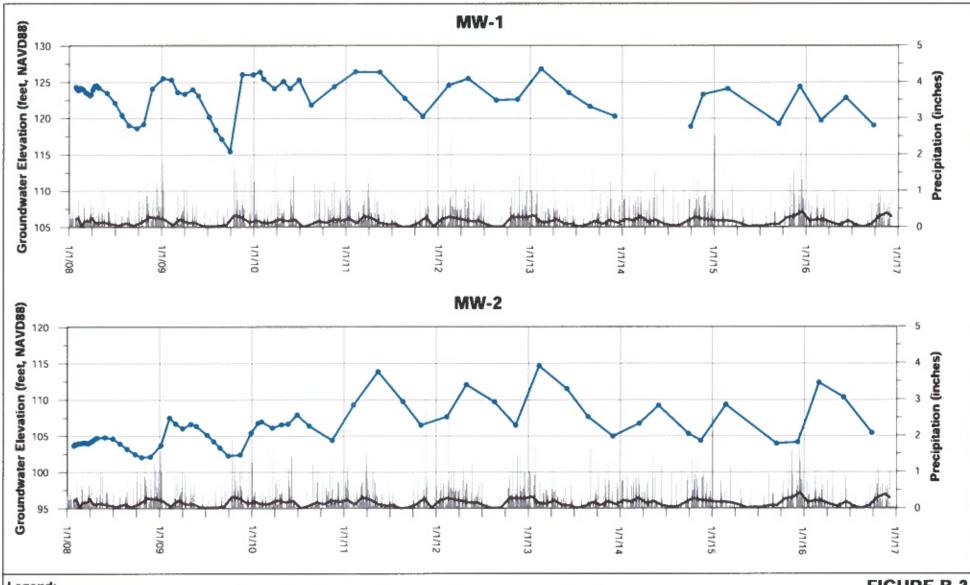
BXS-3 and BXS-4 Hydrographs with Precipitation Former J.H. Baxter Wood Treating Facility

Arlington, Washington

Notes:

Precipitation data source is the National Climatic Data Center (NCDC) Arlington, Washington Station 450257. Precipitation includes rain and/or snow melt.





Groundwater Elevation Daily Precipitation

— Average Monthly Precipitation

FIGURE B-3

MW-1 and MW-2 Hydrographs with Precipitation Former J.H. Baxter Wood Treating Facility

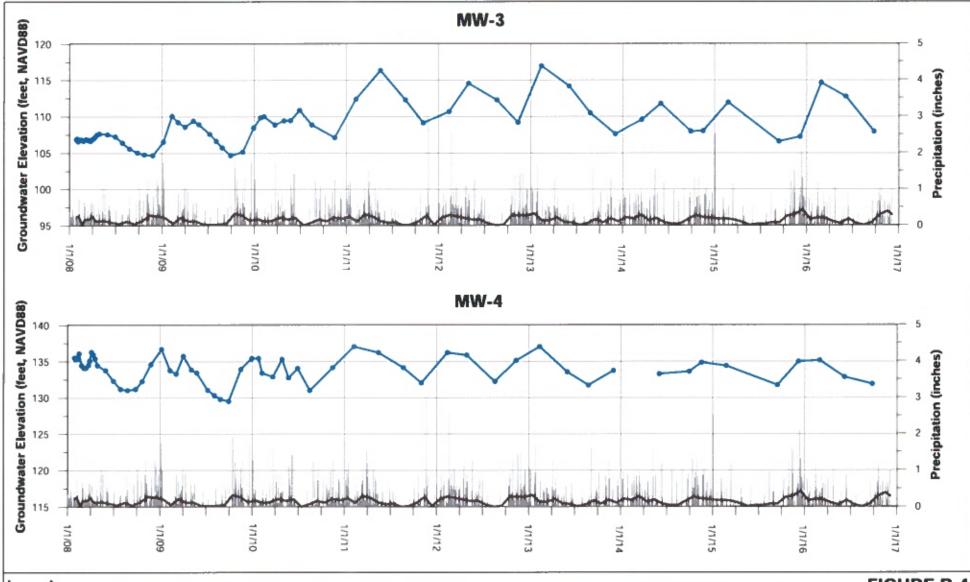
Arlington, Washington

Notes:

Precipitation data source is the National Climatic Data Center (NCDC) Arlington, Washington Station 450257. Precipitation includes rain and/or snow melt.

MW-1 was not measured during the First and Second Quarters 2014.





Groundwater Elevation **Daily Precipitation**

---- Average Monthly Precipitation

FIGURE B-4

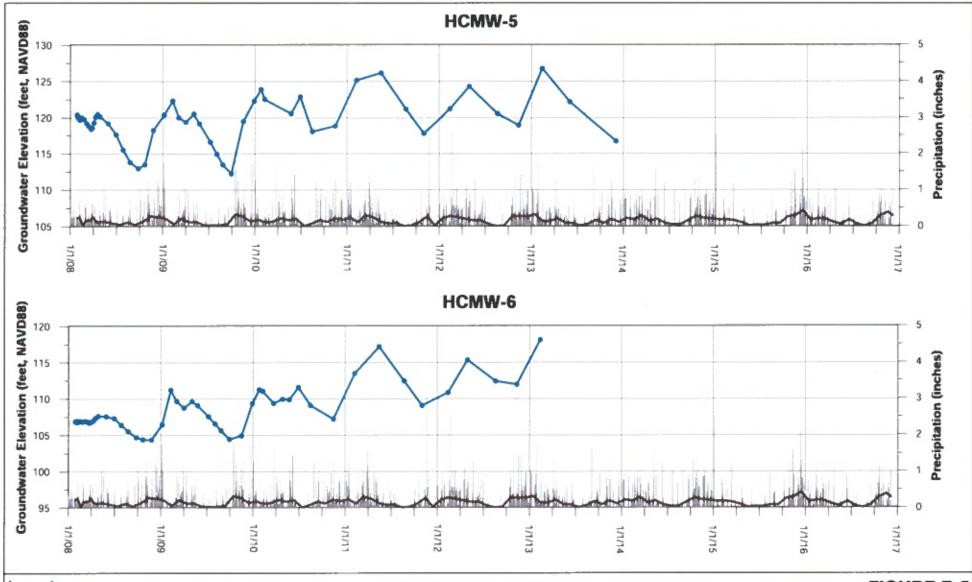
MW-3 and MW-4 Hydrographs with Precipitation

Former J.H. Baxter Wood Treating Facility Arlington, Washington

Precipitation data source is the National Climatic Data Center (NCDC) Arlington, Washington Station 450257. Precipitation includes rain and/or snow melt.

MW-4 was not measured during the First Quarter 2014.





Groundwater Elevation **Daily Precipitation**

Average Monthly Precipitation

FIGURE B-5

HCMW-5 and HCMW-6 Hydrographs with Precipitation Former J.H. Baxter Wood Treating Facility

Arlington, Washington

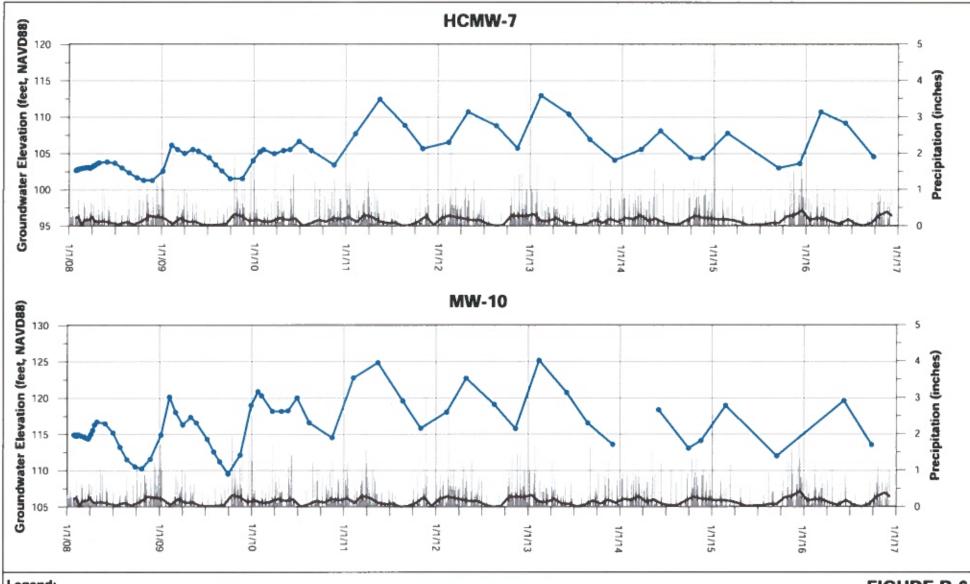
Notes:

Precipitation data source is the National Climatic Data Center (NCDC) Arlington, Washington Station 450257. Precipitation includes rain and/or snow melt.

HCMW-5 was not measured after Fourth Quarter 2013.

HCMW-6 was not measured after First Quarter 2013.





Groundwater Elevation

Daily Precipitation

Average Monthly Precipitation

FIGURE B-6

HCMW-7 and MW-10 Hydrographs with Precipitation Former J.H. Baxter Wood Treating Facility

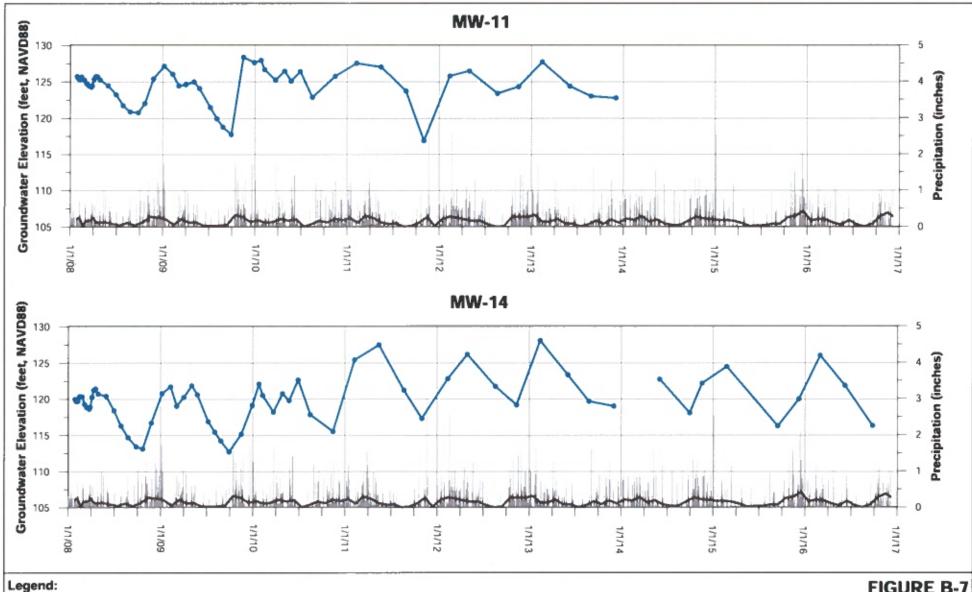
Arlington, Washington

Notes:

Precipitation data source is the National Climatic Data Center (NCDC) Arlington, Washington Station 450257. Precipitation includes rain and/or snow melt.

MW-10 was not measured during the First Quarter 2014.





Groundwater Elevation

Daily Precipitation

Average Monthly Precipitation

FIGURE B-7

MW-11 and MW-14 Hydrographs with Precipitation

Former J.H. Baxter Wood Treating Facility Arlington, Washington

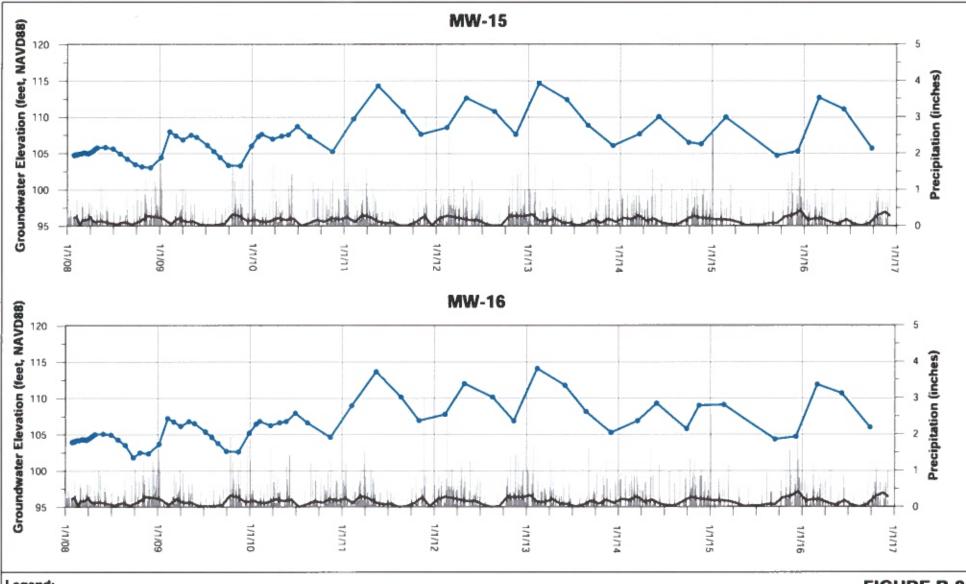
Notes:

Precipitation data source is the National Climatic Data Center (NCDC) Arlington, Washington Station 450257. Precipitation includes rain and/or snow melt.

MW-11 was not measured after Fourth Quarter 2013.

MW-14 was not measured during the First Quarter 2014.







Groundwater Elevation



Daily Precipitation

Average Monthly Precipitation

Notes:

Precipitation data source is the National Climatic Data Center (NCDC) Arlington, Washington Station 450257. Precipitation includes rain and/or snow melt.

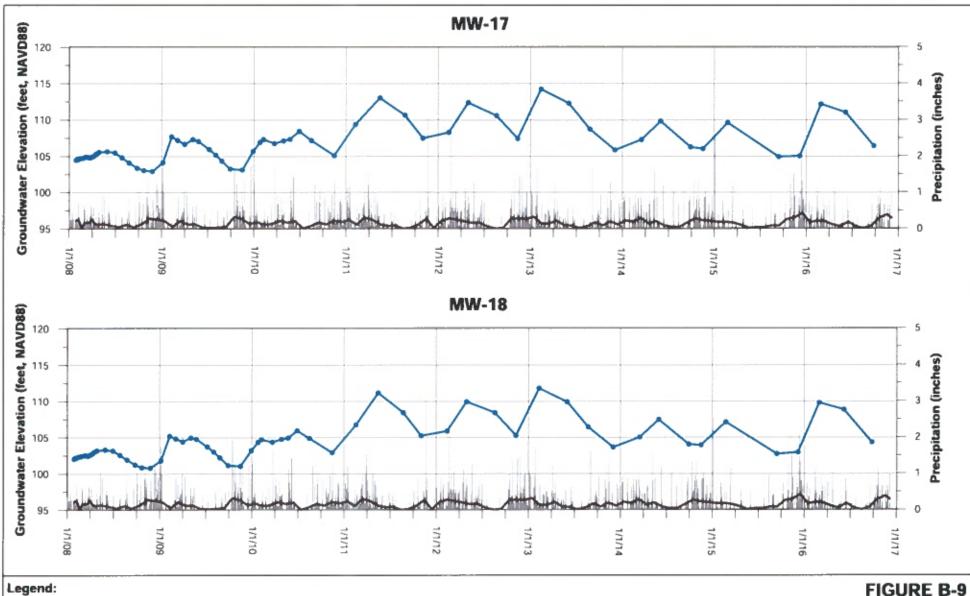
MW-15 measurement from the Second Quarter 2011 was suspected as incorrect and estimated by calculating the average elevation difference between MW-15 and MW-40 from the Third Quarter 2010 through the First Quarter 2011, and adding this difference to the Second Quarter 2011 groundwater elevation measured at MW-40.

FIGURE B-8

MW-15 and MW-16 Hydrographs with Precipitation

Former J.H. Baxter Wood Treating Facility Arlington, Washington





Groundwater Elevation

Daily Precipitation

Average Monthly Precipitation

FIGURE B-9

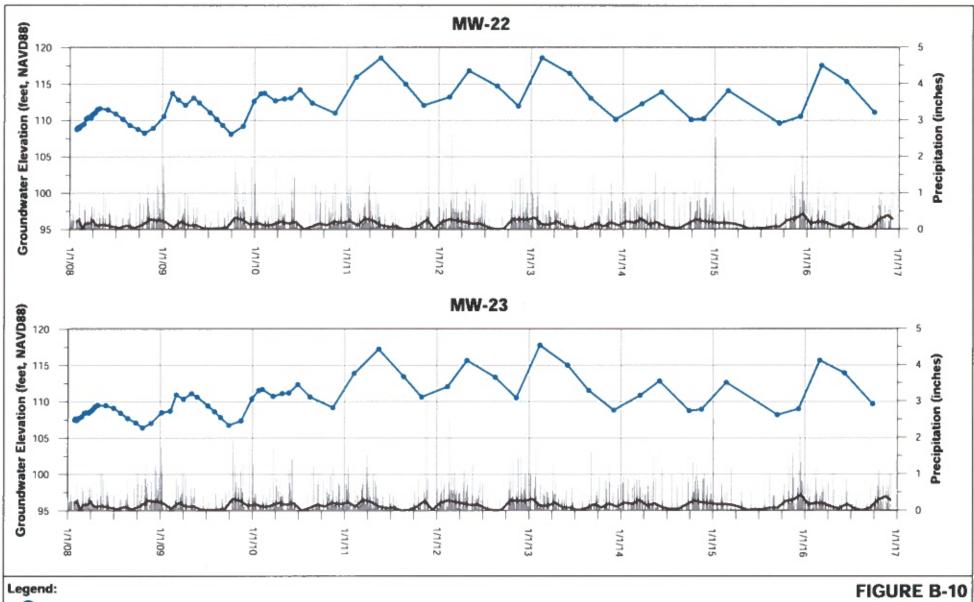
MW-17 and MW-18 Hydrographs with Precipitation Former J.H. Baxter Wood Treating Facility

Arlington, Washington

Notes:

Precipitation data source is the National Climatic Data Center (NCDC) Arlington, Washington Station 450257. Precipitation includes rain and/or snow melt.





Groundwater Elevation

Daily Precipitation

Average Monthly Precipitation

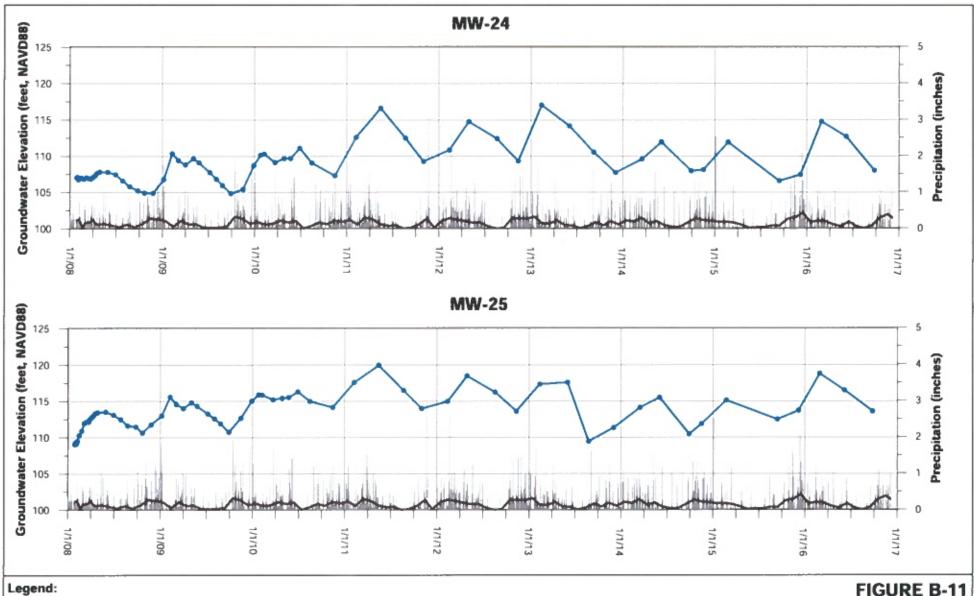
MW-22 and MW-23 Hydrographs with Precipitation Former J.H. Baxter Wood Treating Facility

Arlington, Washington

Notes:

Precipitation data source is the National Climatic Data Center (NCDC) Arlington, Washington Station 450257. Precipitation includes rain and/or snow melt.





Groundwater Elevation **Daily Precipitation**

Average Monthly Precipitation

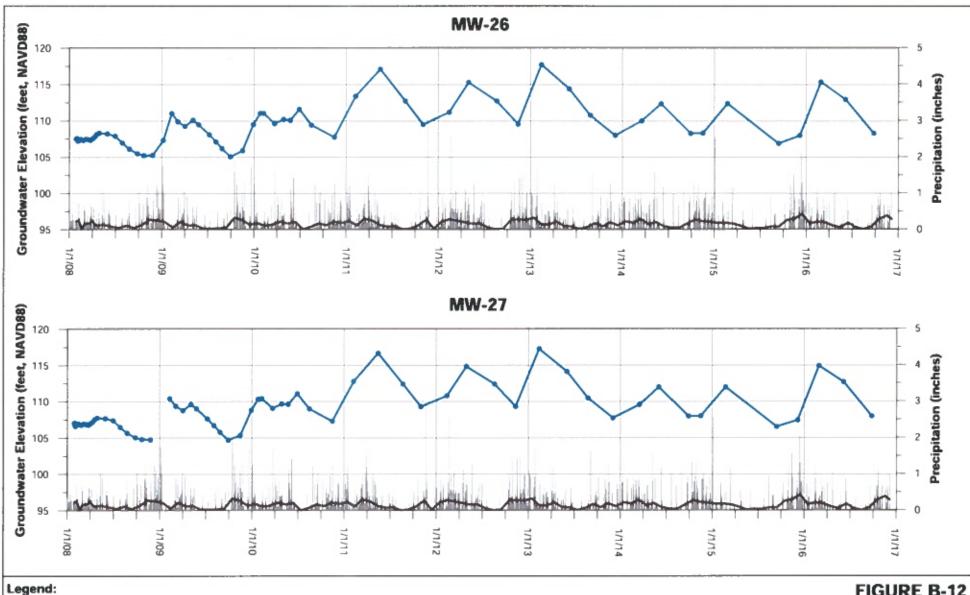
MW-24 and MW-25 Hydrographs with Precipitation Former J.H. Baxter Wood Treating Facility

Arlington, Washington

Notes:

Precipitation data source is the National Climatic Data Center (NCDC) Arlington, Washington Station 450257. Precipitation includes rain and/or snow melt.





Daily Precipitation

Groundwater Elevation

Average Monthly Precipitation

FIGURE B-12

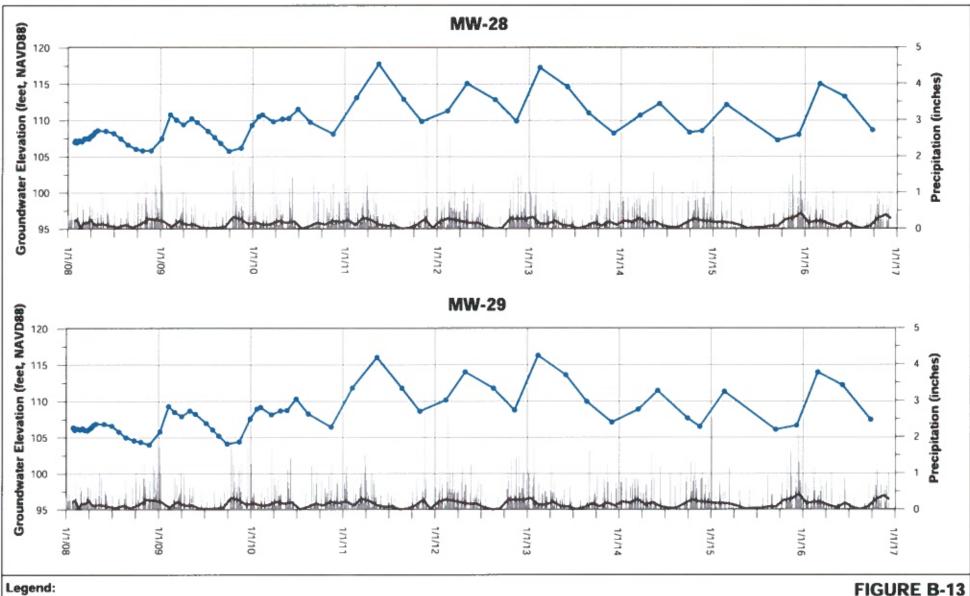
MW-26 and MW-27 Hydrographs with Precipitation Former J.H. Baxter Wood Treating Facility

Arlington, Washington

Precipitation data source is the National Climatic Data Center (NCDC) Arlington, Washington Station 450257. Precipitation includes rain and/or snow melt.

MW-27 was not measured in December 2008 due to high surface water conditions surrounding the well.





Groundwater Elevation Daily Precipitation

Average Monthly Precipitation

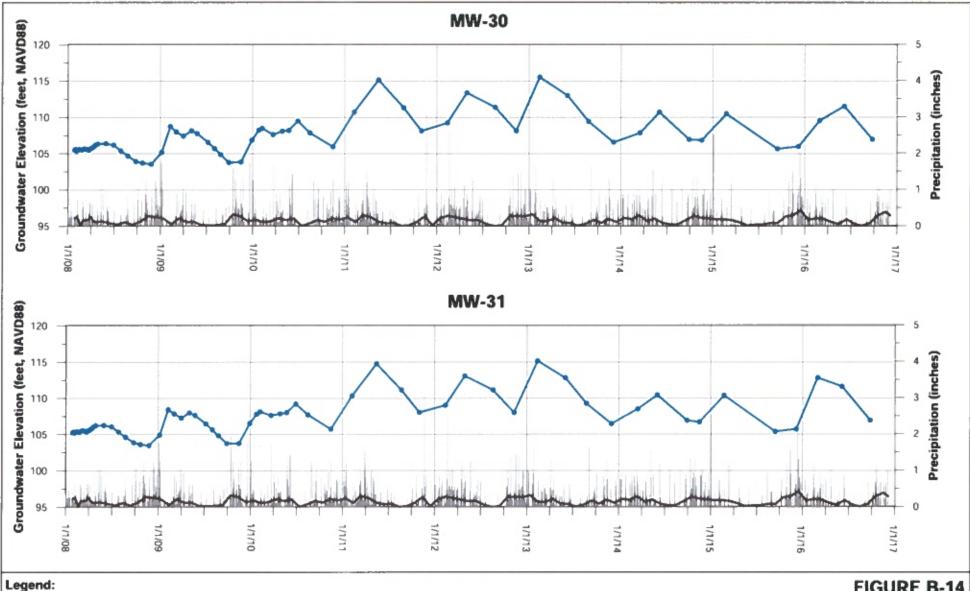
MW-28 and MW-29 Hydrographs with Precipitation

Former J.H. Baxter Wood Treating Facility Arlington, Washington

Notes:

Precipitation data source is the National Climatic Data Center (NCDC) Arlington, Washington Station 450257. Precipitation includes rain and/or snow melt.





Daily Precipitation

Average Monthly Precipitation

Groundwater Elevation

FIGURE B-14

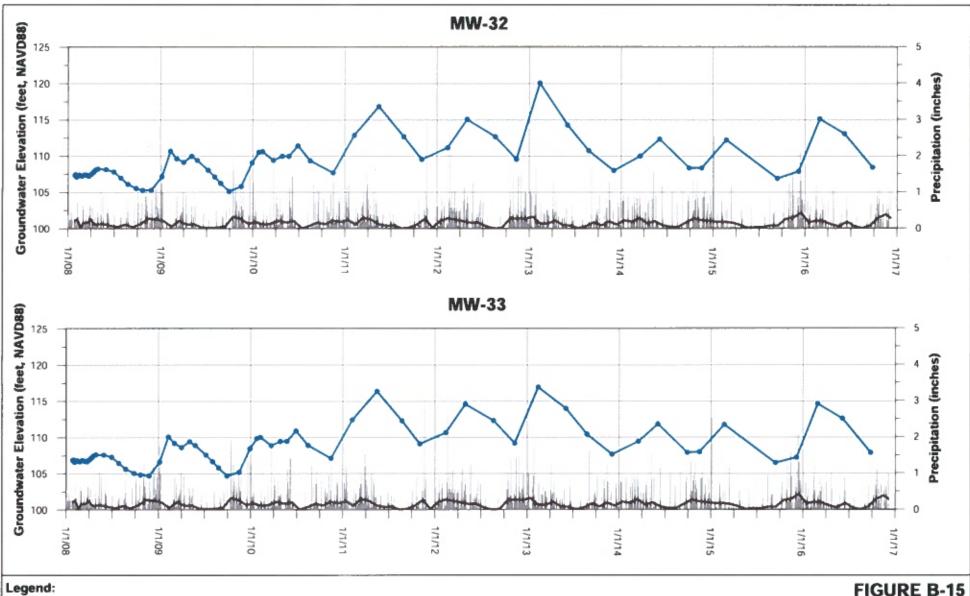
MW-30 and MW-31 Hydrographs with Precipitation Former J.H. Baxter Wood Treating Facility

Arlington, Washington

Notes:

Precipitation data source is the National Climatic Data Center (NCDC) Arlington, Washington Station 450257. Precipitation includes rain and/or snow melt





Groundwater Elevation Daily Precipitation

Average Monthly Precipitation

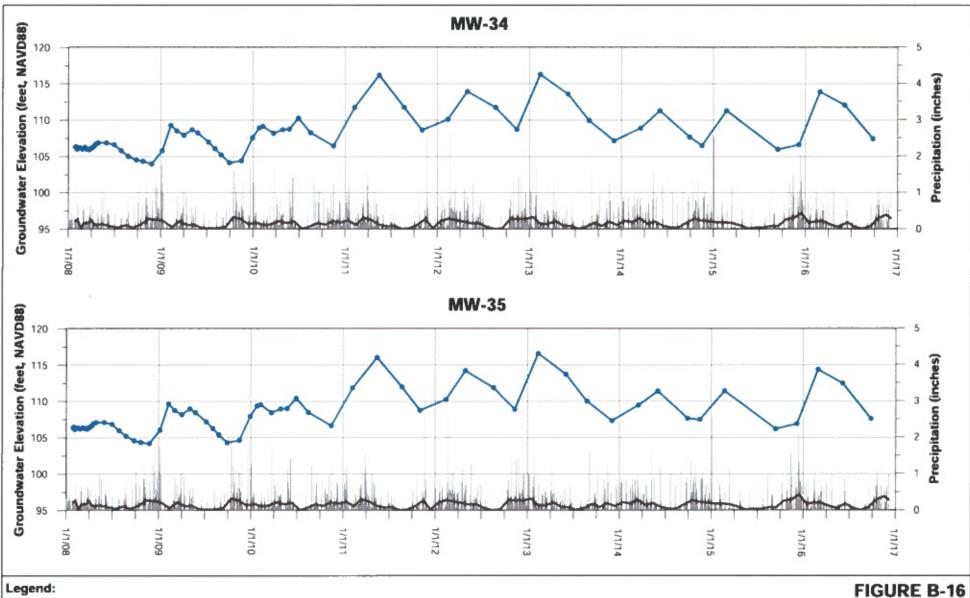
MW-32 and MW-33 Hydrographs with Precipitation Former J.H. Baxter Wood Treating Facility

Arlington, Washington

Notes:

Precipitation data source is the National Climatic Data Center (NCDC) Arlington, Washington Station 450257, Precipitation includes rain and/or snow melt.





Groundwater Elevation **Daily Precipitation**

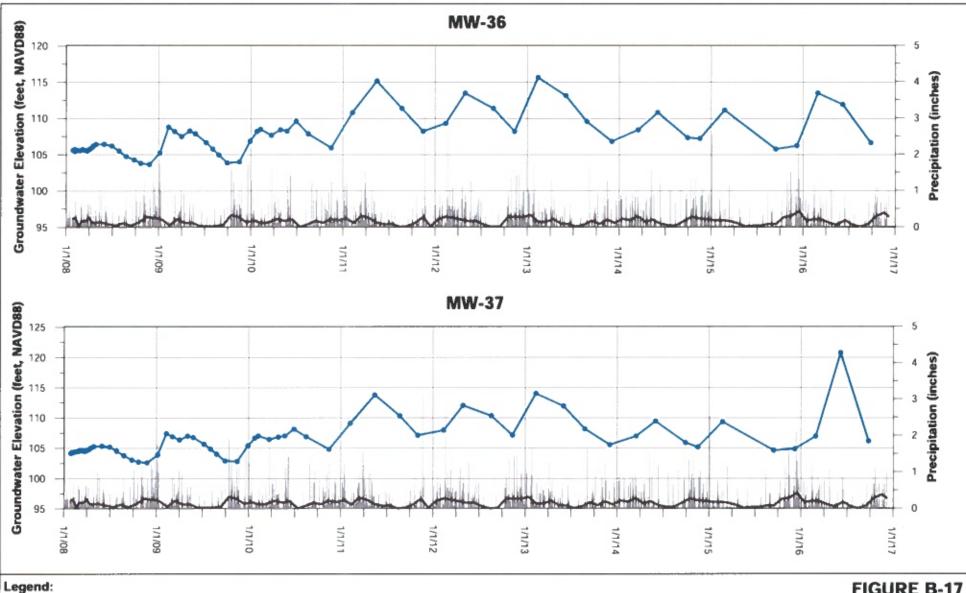
Average Monthly Precipitation

Notes: Precipitation data source is the National Climatic Data Center (NCDC) Arlington, Washington Station 450257. Precipitation includes rain and/or snow melt.

MW-34 and MW-35 Hydrographs with Precipitation Former J.H. Baxter Wood Treating Facility

Arlington, Washington





Groundwater Elevation

Daily Precipitation

Average Monthly Precipitation

FIGURE B-17

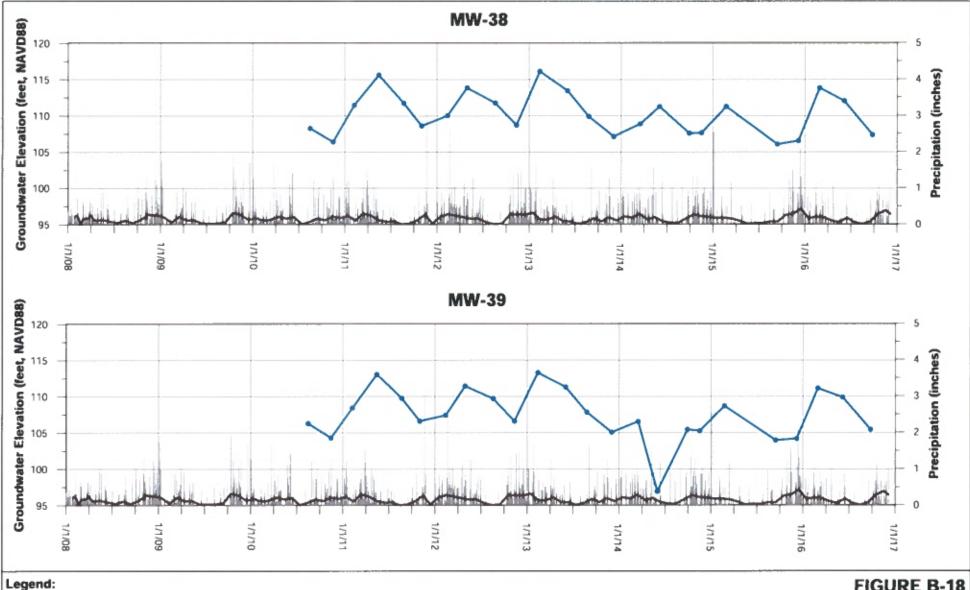
MW-36 and MW-37 Hydrographs with Precipitation Former J.H. Baxter Wood Treating Facility

Arlington, Washington

Notes:

Precipitation data source is the National Climatic Data Center (NCDC) Arlington, Washington Station 450257. Precipitation includes rain and/or snow melt. Suspect measurement at MW-37 in Second Quarter 2016.





Average Monthly Precipitation Notes:

Precipitation data source is the National Climatic Data Center (NCDC) Arlington, Washington Station 450257. Precipitation includes rain and/or snow melt.

MW-38 and MW-39 constructed in July 2010.

Groundwater Elevation Daily Precipitation

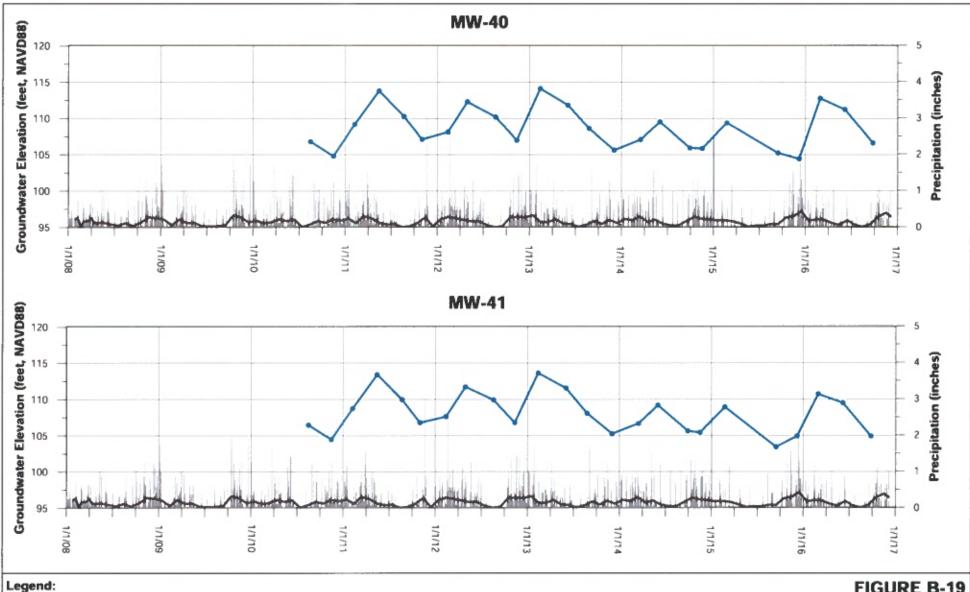
MW-39 measurement from Second Quarter 2014 is suspected to be a field error and is 10 feet lower than the expected value.

FIGURE B-18

MW-38 and MW-39 Hydrographs with Precipitation Former J.H. Baxter Wood Treating Facility

Arlington, Washington





Groundwater Elevation

Daily Precipitation

Average Monthly Precipitation

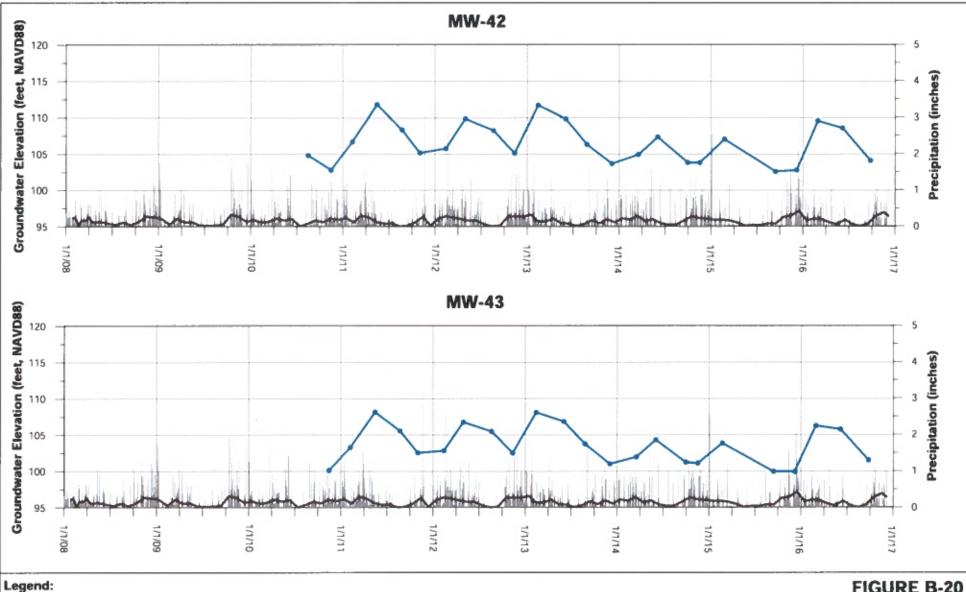
FIGURE B-19

MW-40 and MW-41 Hydrographs with Precipitation

Former J.H. Baxter Wood Treating Facility Arlington, Washington

Precipitation data source is the National Climatic Data Center (NCDC) Arlington, Washington Station 450257. Precipitation includes rain and/or snow melt. MW-40 and MW-41 constructed in July 2010.





Daily Precipitation

Groundwater Elevation

— Average Monthly Precipitation

FIGURE B-20

MW-42 and MW-43 Hydrographs with Precipitation Former J.H. Baxter Wood Treating Facility

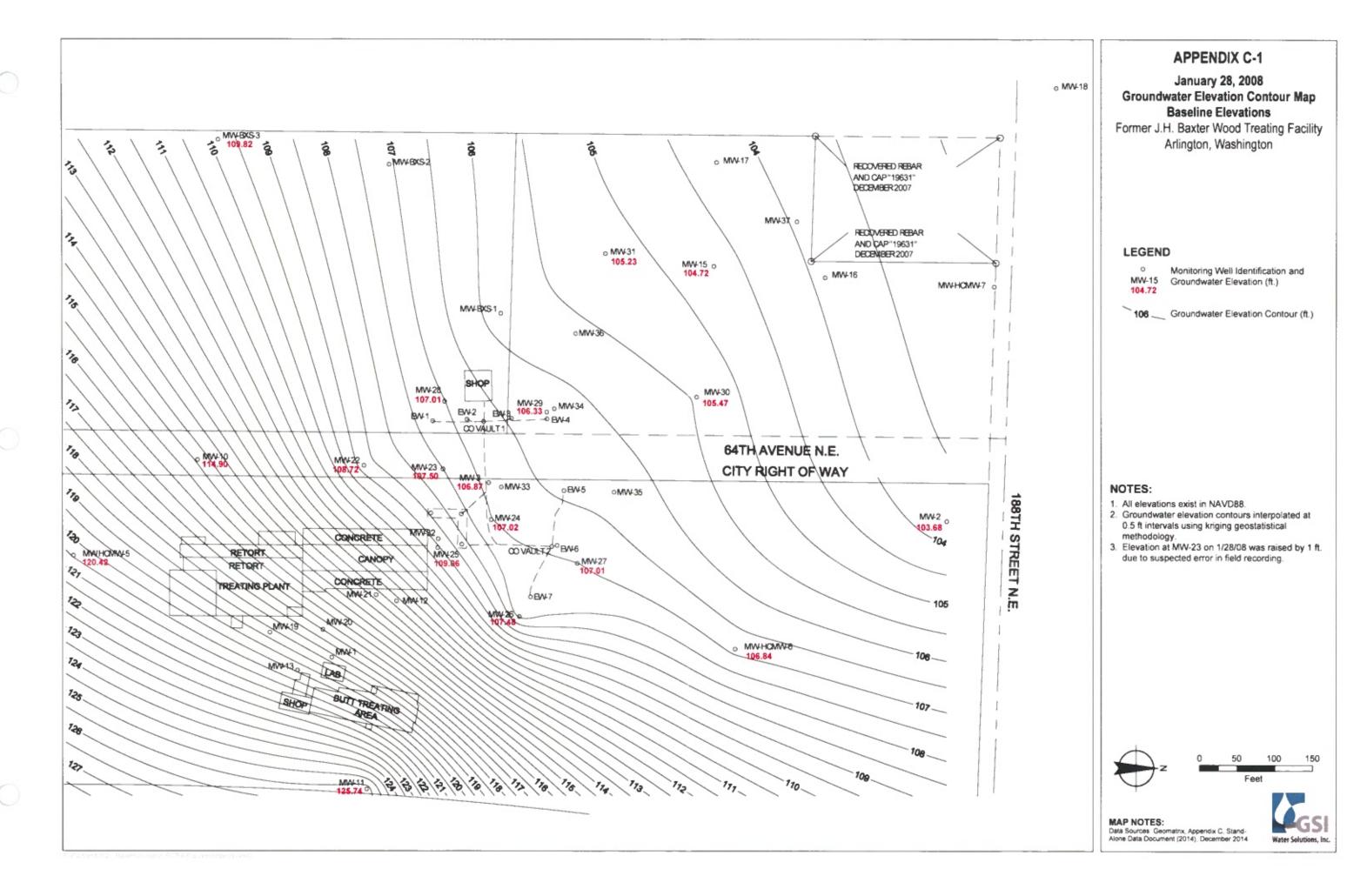
Arlington, Washington

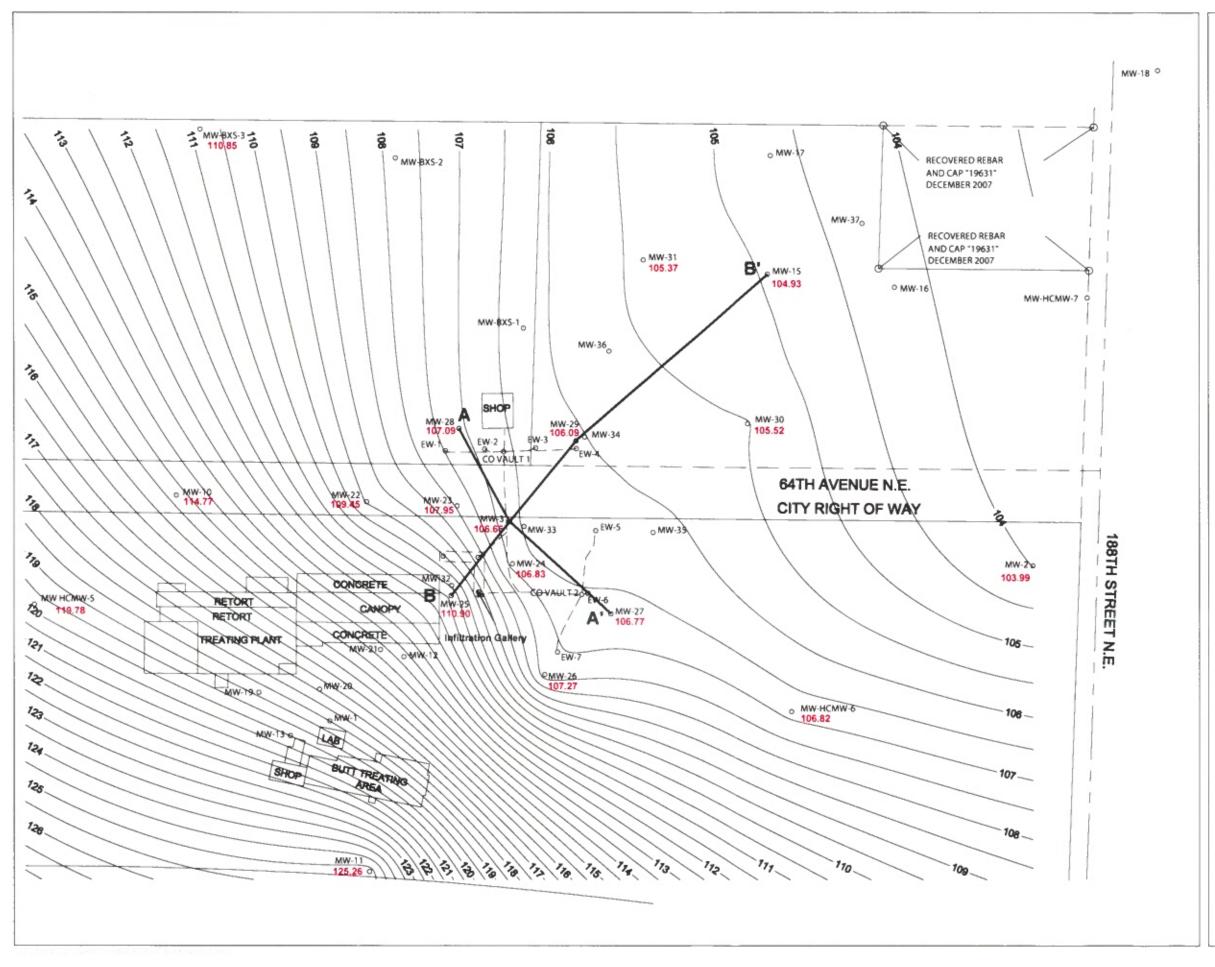
Precipitation data source is the National Climatic Data Center (NCDC) Arlington, Washington Station 450257. Precipitation includes rain and/or snow melt. MW-42 constructed in July 2010 and MW-43 constructed in October 2010.



Appendix C

Groundwater Contour Maps





February 25, 2008 Groundwater Elevation Contour Map Baseline Elevations

Former J.H. Baxter Wood Treating Facility Arlington, Washington

LEGEND

Monitoring Well Identification and MW-15 Groundwater Elevation (ft.)

106 __ Groundwater Elevation Contour (ft.)

NOTES:

- 1. All elevations exist in NAVD88.
- Groundwater elevation contours interpolated at 0.5 ft intervals using kriging geostatistical methodology.

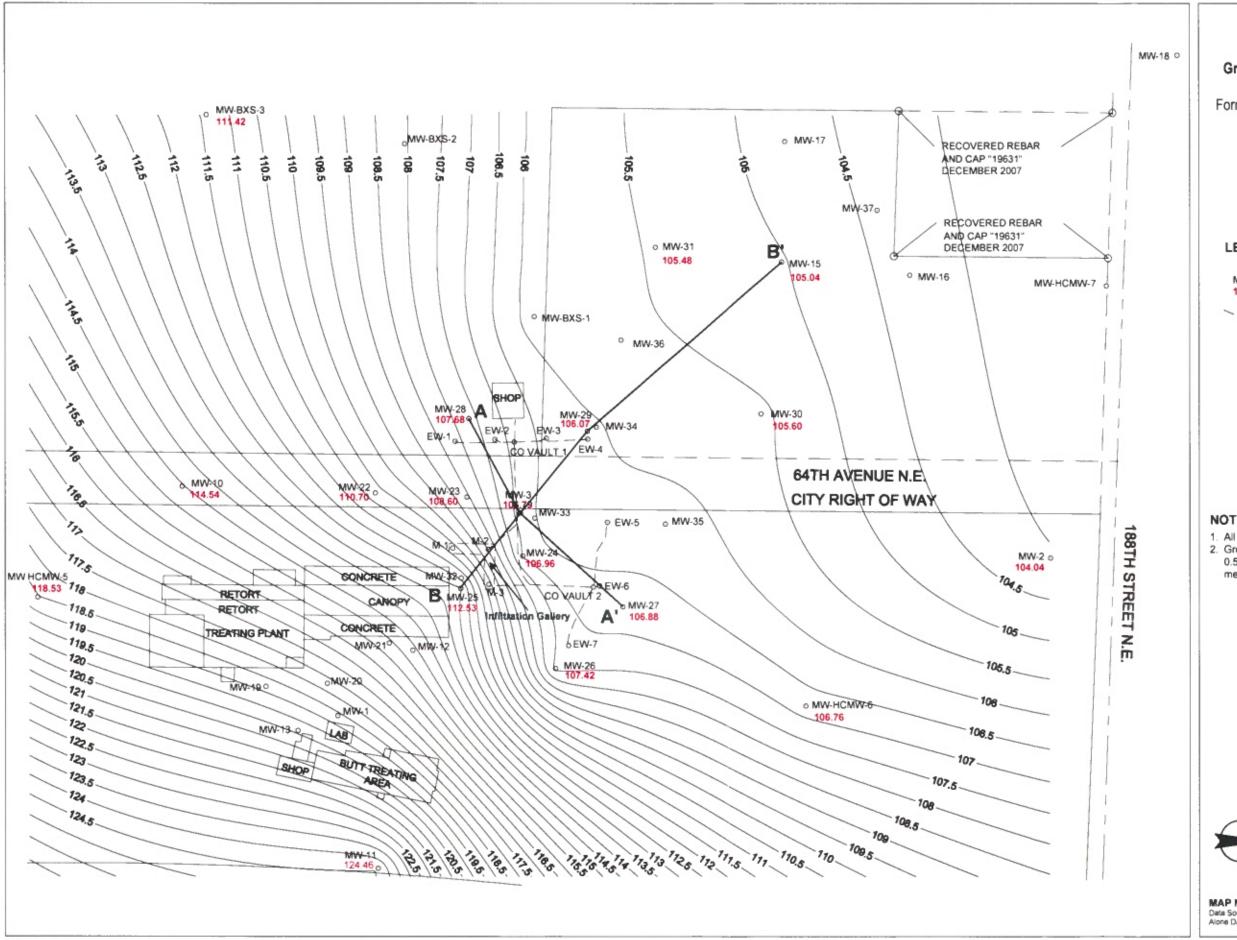




MAP NOTES:

Data Sources Geomatrix, Appendix C, Stand-Alone Data Document (2014), December 2014





March 28, 2008 **Groundwater Elevation Contour Map Baseline Elevations**

Former J.H. Baxter Wood Treating Facility Arlington, Washington

LEGEND

Monitoring Well Identification and MW-15 Groundwater Elevation (ft.) 104.72

106 __ Groundwater Elevation Contour (ft.)

NOTES:

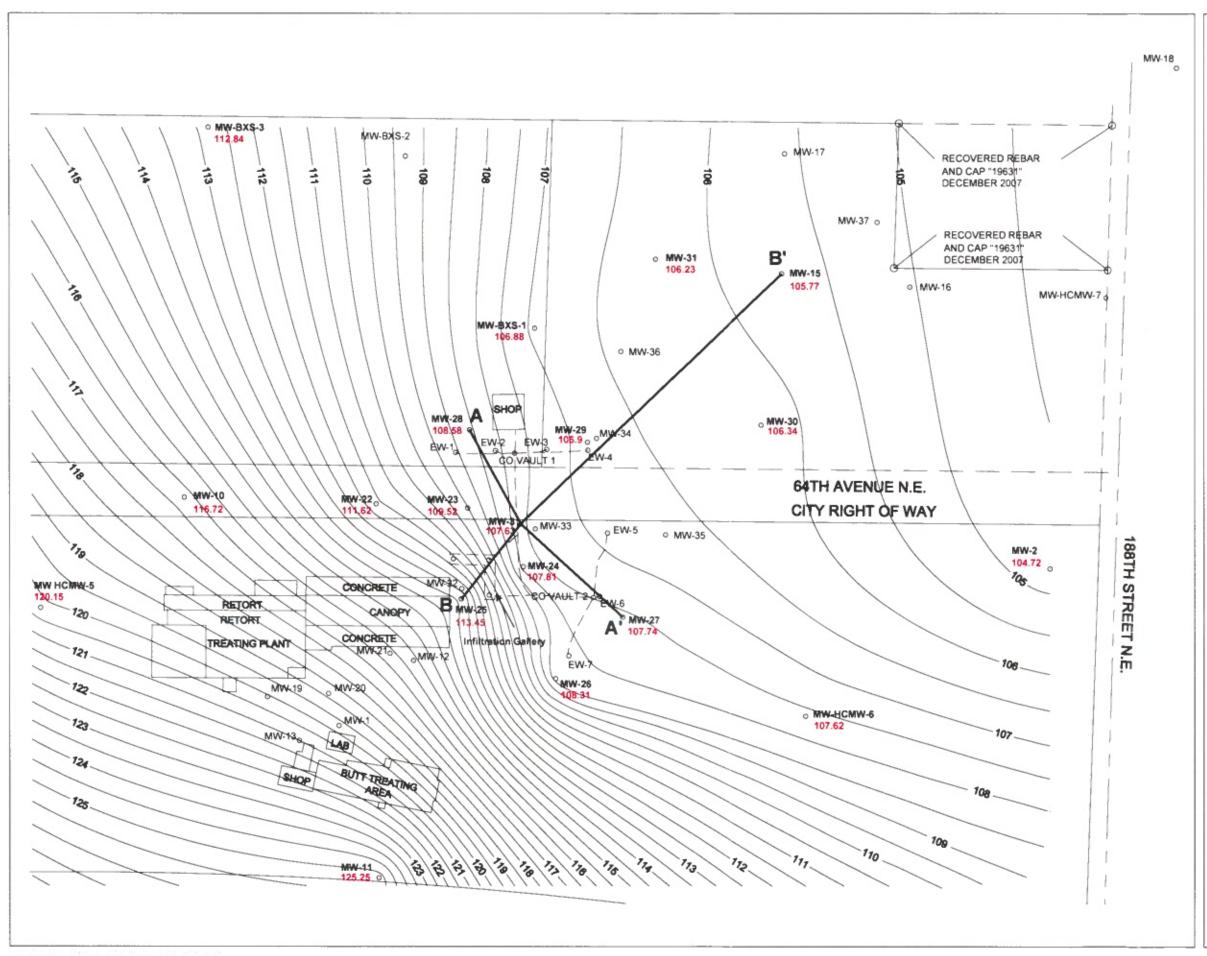
- All elevations exist in NAVD88.
- 2. Groundwater elevation contours interpolated at 0.5 ft intervals using kriging geostatistical methodology.





MAP NOTES: Data Sources Geomatrix, Appendix C. Stand-Alone Data Document (2014), December 2014





April 28, 2008 **Groundwater Elevation Contour Map Baseline Elevations**

Former J.H. Baxter Wood Treating Facility Arlington, Washington

LEGEND

Monitoring Well Identification and MW-15 Groundwater Elevation (ft.) 104.72

106 __ Groundwater Elevation Contour (ft.)

NOTES:

- 1. All elevations exist in NAVD88.
- 2. Groundwater elevation contours interpolated at 0.5 ft intervals using knging geostatistical methodology.
- 3. Bold well identifications and groundwater levels indicate the points that were used to generate groundwater elevation contours.

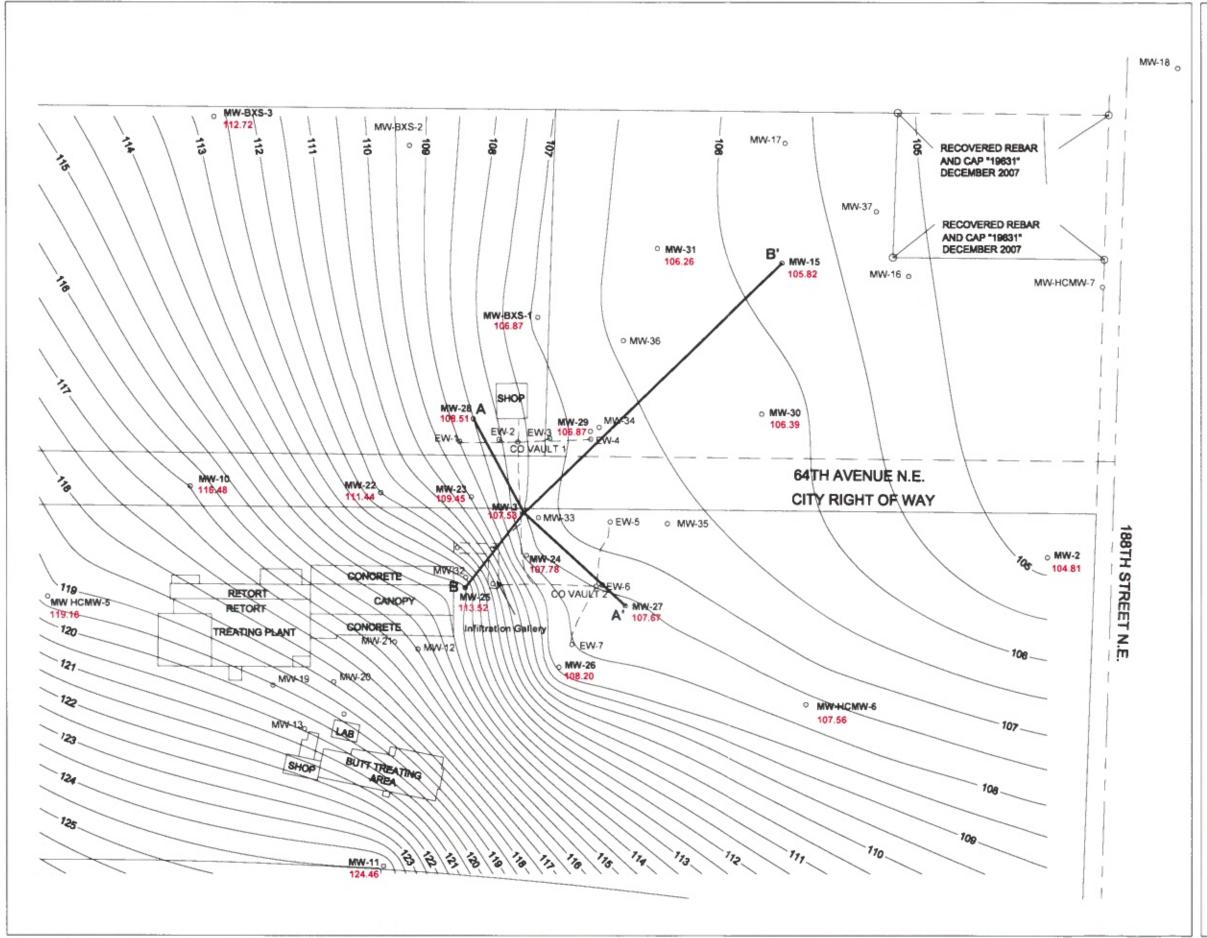




MAP NOTES:

Data Sources: Geomatrix, Appendix C, Stand-Alone Data Document (2014), December 2014





May 30, 2008 Groundwater Elevation Contour Map Baseline Elevations

Former J.H. Baxter Wood Treating Facility Arlington, Washington

LEGEND

O Monitoring Well Identification and MW-15 Groundwater Elevation (ft.)

106 __ Groundwater Elevation Contour (ft.)

NOTES:

- 1. All elevations exist in NAVD88.
- Groundwater elevation contours interpolated at 0.5 ft intervals using kriging geostatistical methodology.
- Bold well identifications and groundwater levels indicate the points that were used to generate groundwater elevation contours.

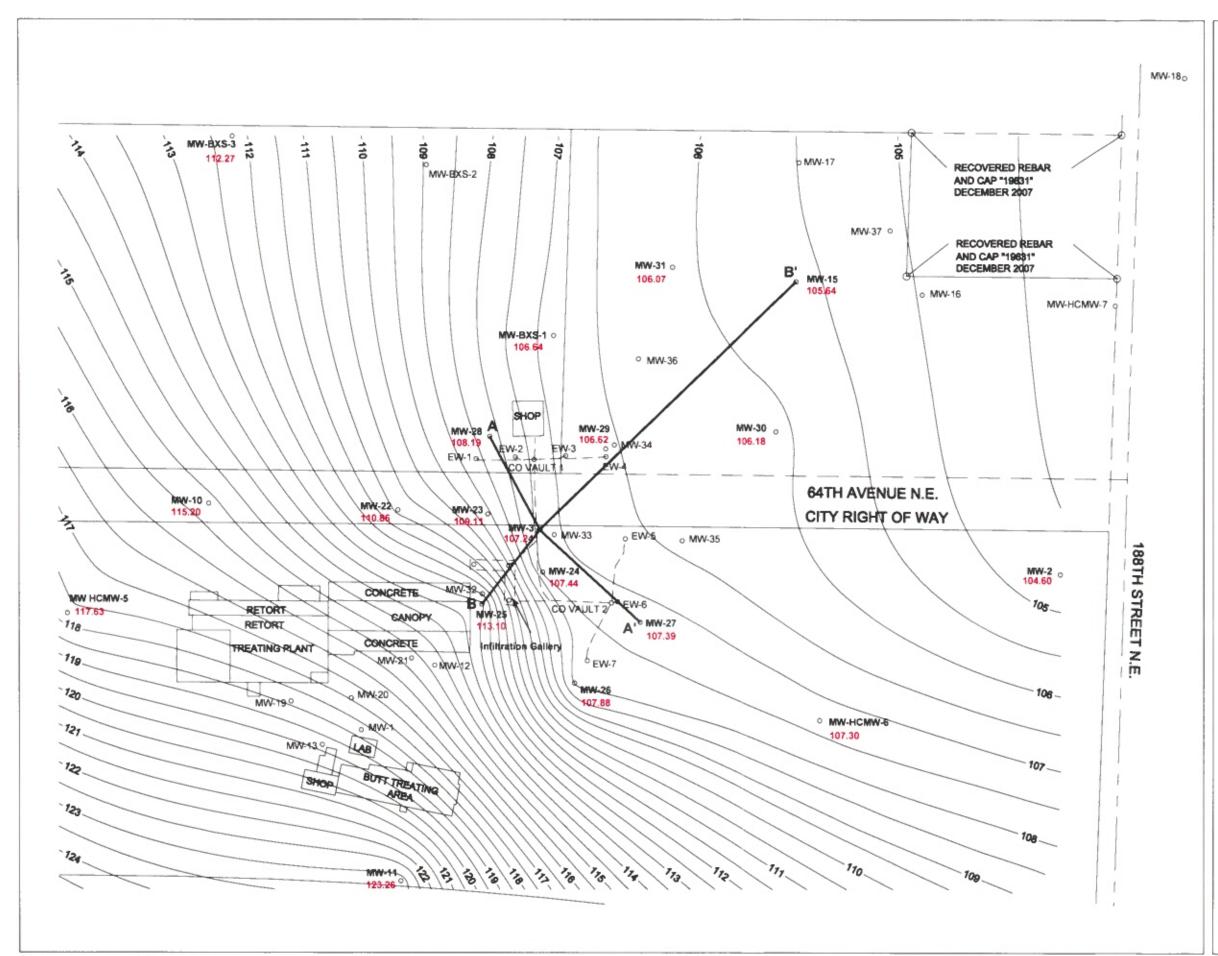




MAP NOTES:

Data Sources Geomatrix, Appendix C, Stand-Alone Data Document (2014), December 2014





JUNE 30, 2008 Groundwater Elevation Contour Map **Baseline Elevations**

Former J.H. Baxter Wood Treating Facility Arlington, Washington

LEGEND

Monitoring Well Identification and MW-15 Groundwater Elevation (ft.) 104.72

106 __ Groundwater Elevation Contour (ft.)

NOTES:

- 1. All elevations exist in NAVD88.
- 2. Groundwater elevation contours interpolated at 0.5 ft intervals using kriging geostatistical methodology.
- 3. Bold well identifications and groundwater levels indicate the points that were used to generate groundwater elevation contours.

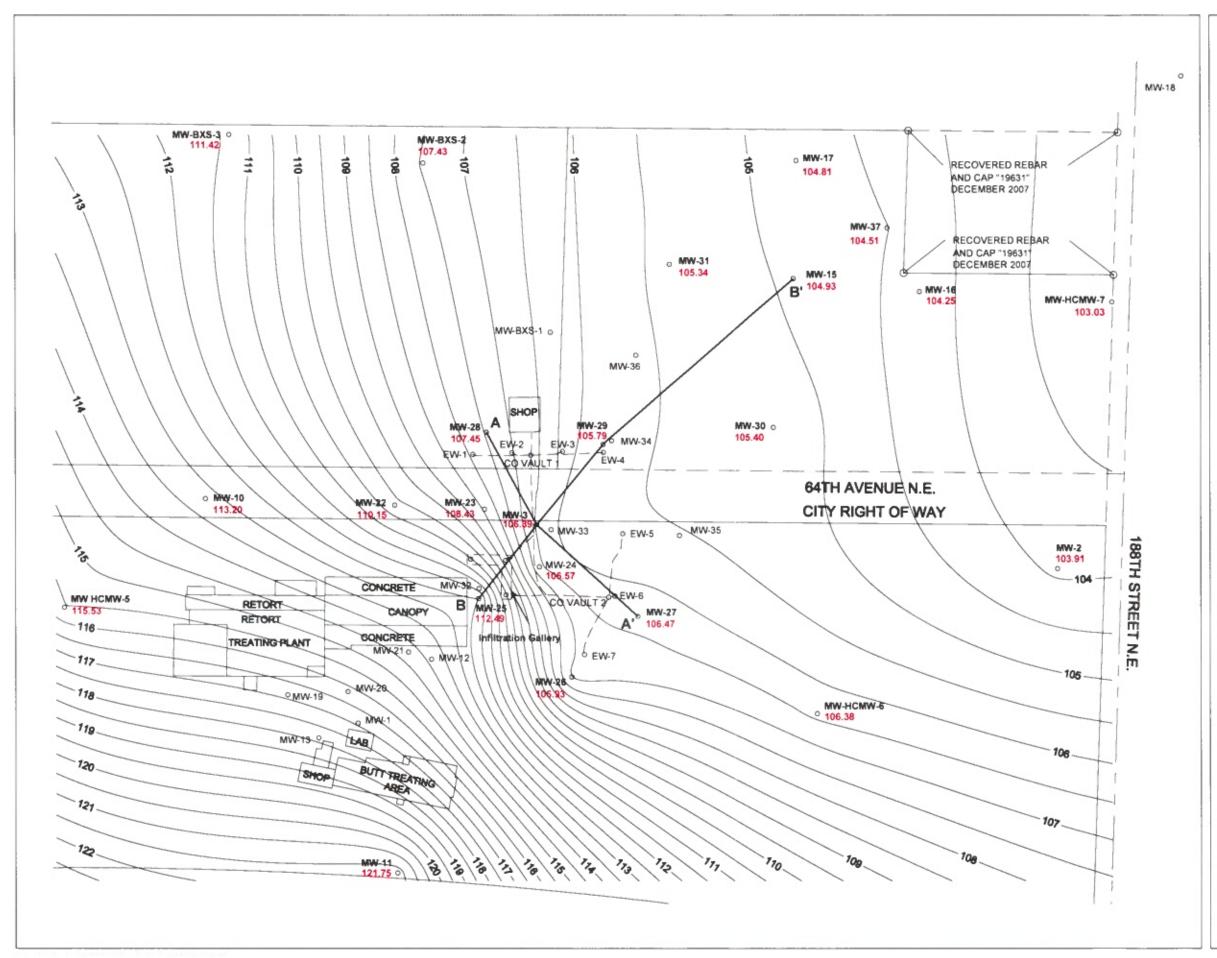




MAP NOTES:

Data Sources Geomatrix, Appendix C, Stand-Alone Data Document (2014), December 2014





July 28, 2008 Groundwater Elevation Contour Map **Baseline Elevations**

Former J.H. Baxter Wood Treating Facility Arlington, Washington

LEGEND

Monitoring Well Identification and MW-15 Groundwater Elevation (ft.) 104.72

106 __ Groundwater Elevation Contour (ft.)

NOTES:

- 1. All elevations exist in NAVD88.
- 2. Groundwater elevation contours interpolated at 0.5 ft intervals using knging geostatistical methodology.
- 3. Bold well identifications and groundwater levels indicate the points that were used to generate groundwater elevation contours.

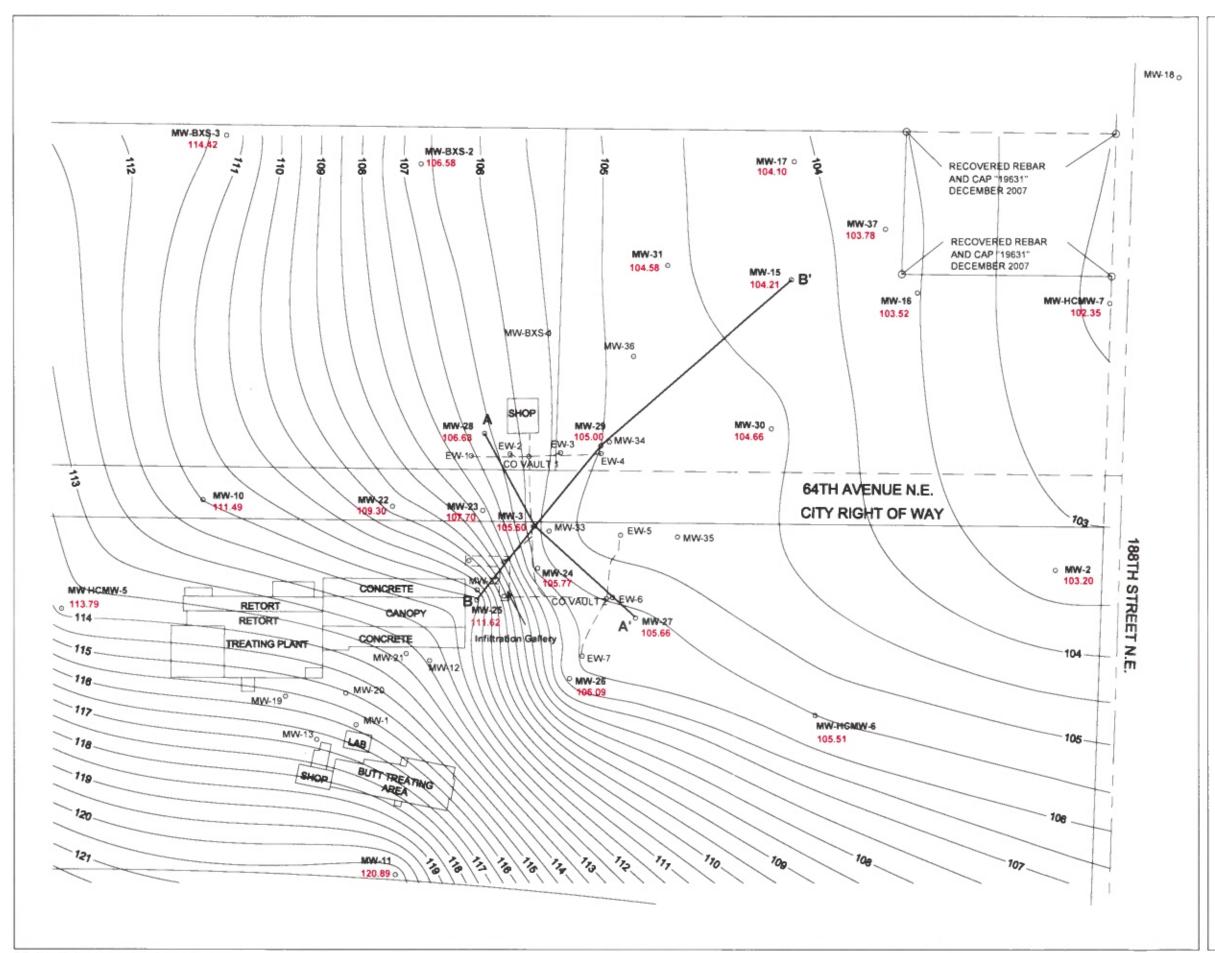




MAP NOTES:

Data Sources: Geomatrix, Appendix C, Stand-Alone Data Document (2014), December 2014





AUGUST 25, 2008 Groundwater Elevation Contour Map Baseline Elevations

Former J.H. Baxter Wood Treating Facility
Arlington, Washington

LEGEND

O Monitoring Well Identification and MW-15 Groundwater Elevation (ft.)

106 __ Groundwater Elevation Contour (ft.)

NOTES:

- 1. All elevations exist in NAVD88.
- Groundwater elevation contours interpolated at 0.5 ft intervals using kriging geostatistical methodology.
- Bold well identifications and groundwater levels indicate the points that were used to generate groundwater elevation contours.

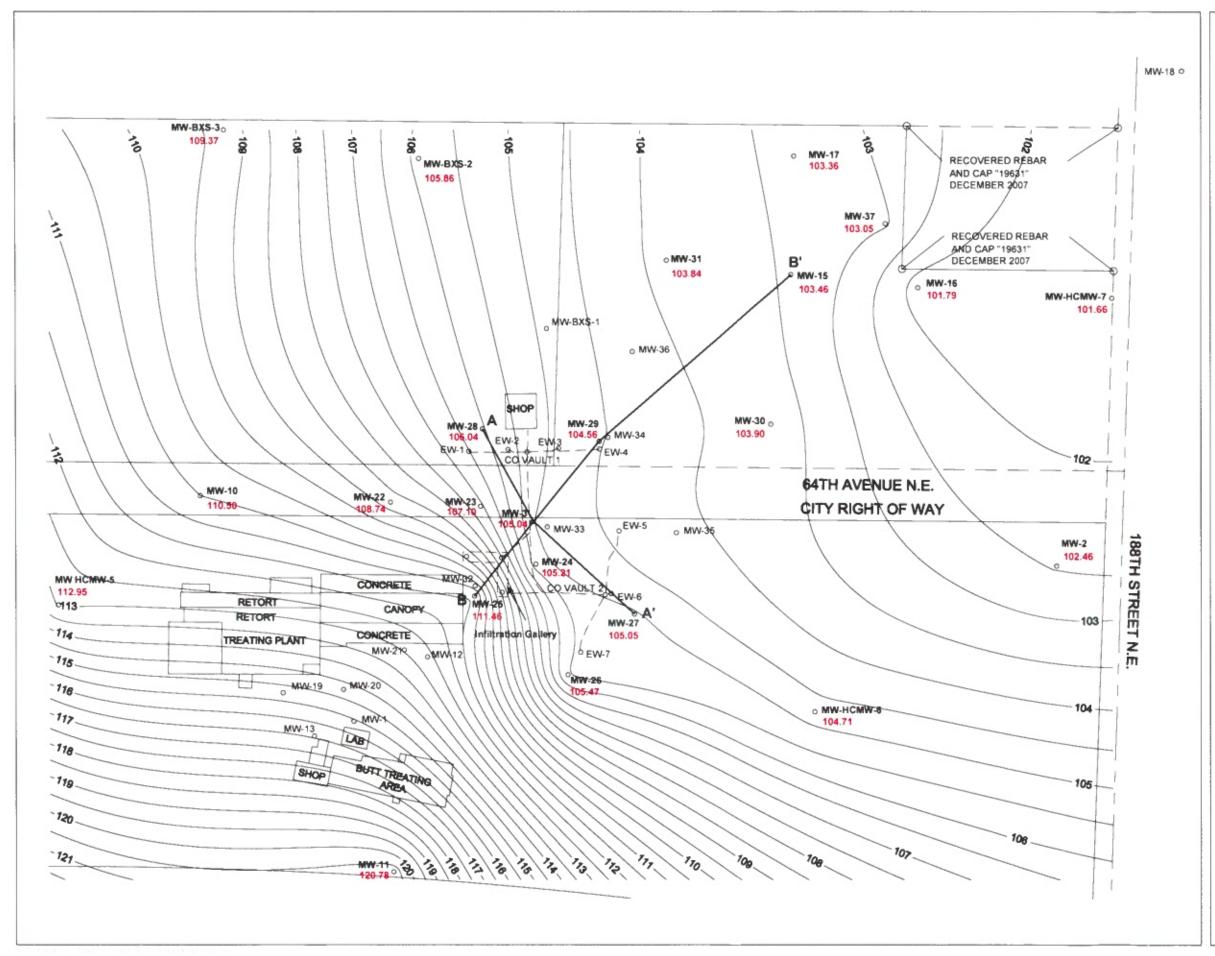




MAP NOTES:

Data Sources Geomainx, Appendix C, Stand-Alone Data Document (2014), December 2014





SEPTEMBER 26, 2008 Groundwater Elevation Contour Map Baseline Elevations

Former J.H. Baxter Wood Treating Facility Arlington, Washington

LEGEND

Monitoring Well Identification and Groundwater Elevation (ft.)

106 __ Groundwater Elevation Contour (ft.)

NOTES:

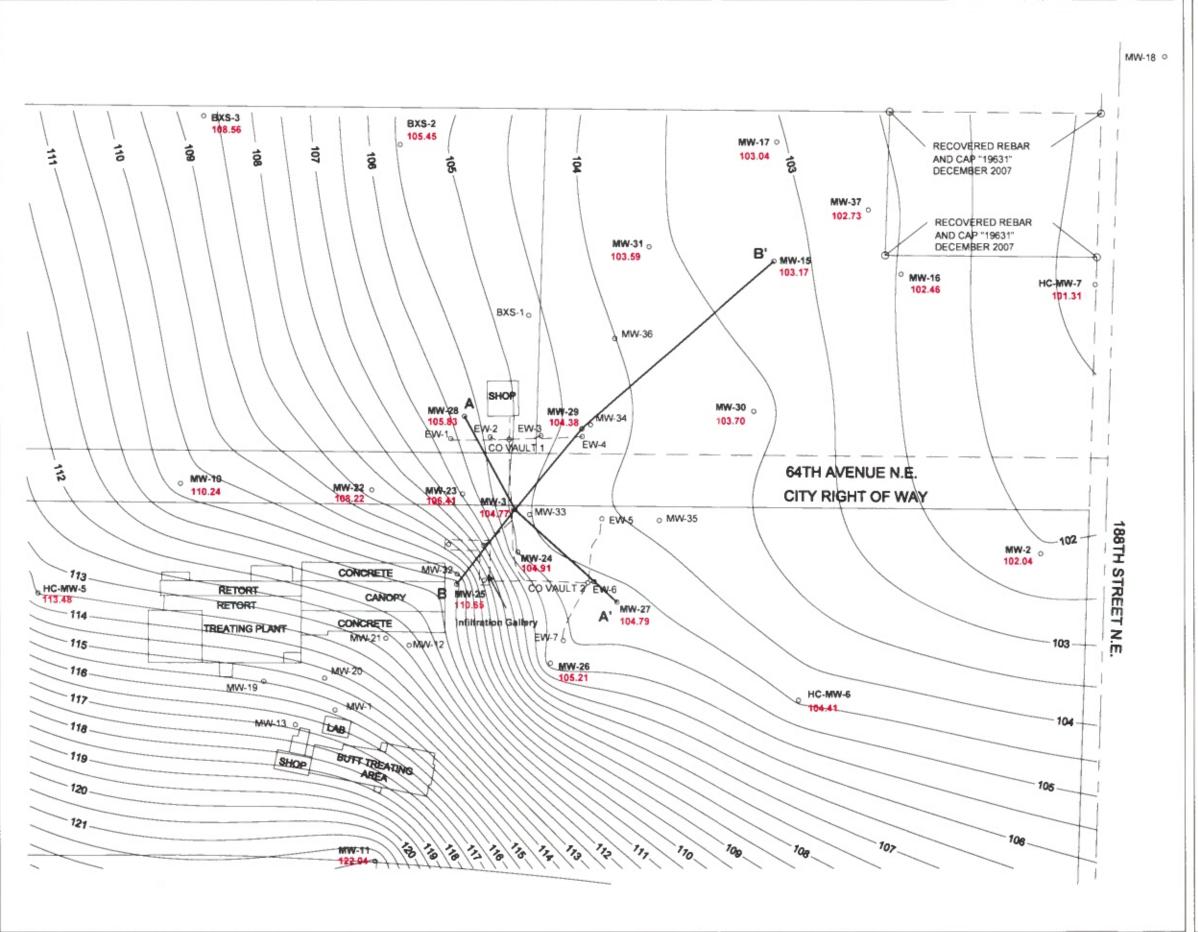
- All elevations exist in NAVD88.
- Groundwater elevation contours interpolated at 0.5 ft intervals using kriging geostatistical methodology.
- Bold well identifications and groundwater levels indicate the points that were used to generate groundwater elevation contours.





MAP NOTES: Data Sources: Geomatrix, Appendix C, Stand-Alone Data Document (2014), December 2014

GSI Water Solutions, In-



OCTOBER 22, 2008 Groundwater Elevation Contour Map Baseline Elevations

Former J.H. Baxter Wood Treating Facility
Arlington, Washington

LEGEND

Monitoring Well Identification and
 MW-15
 Groundwater Elevation (ft.)

108 ... Groundwater Elevation Contour (ft.)

NOTES:

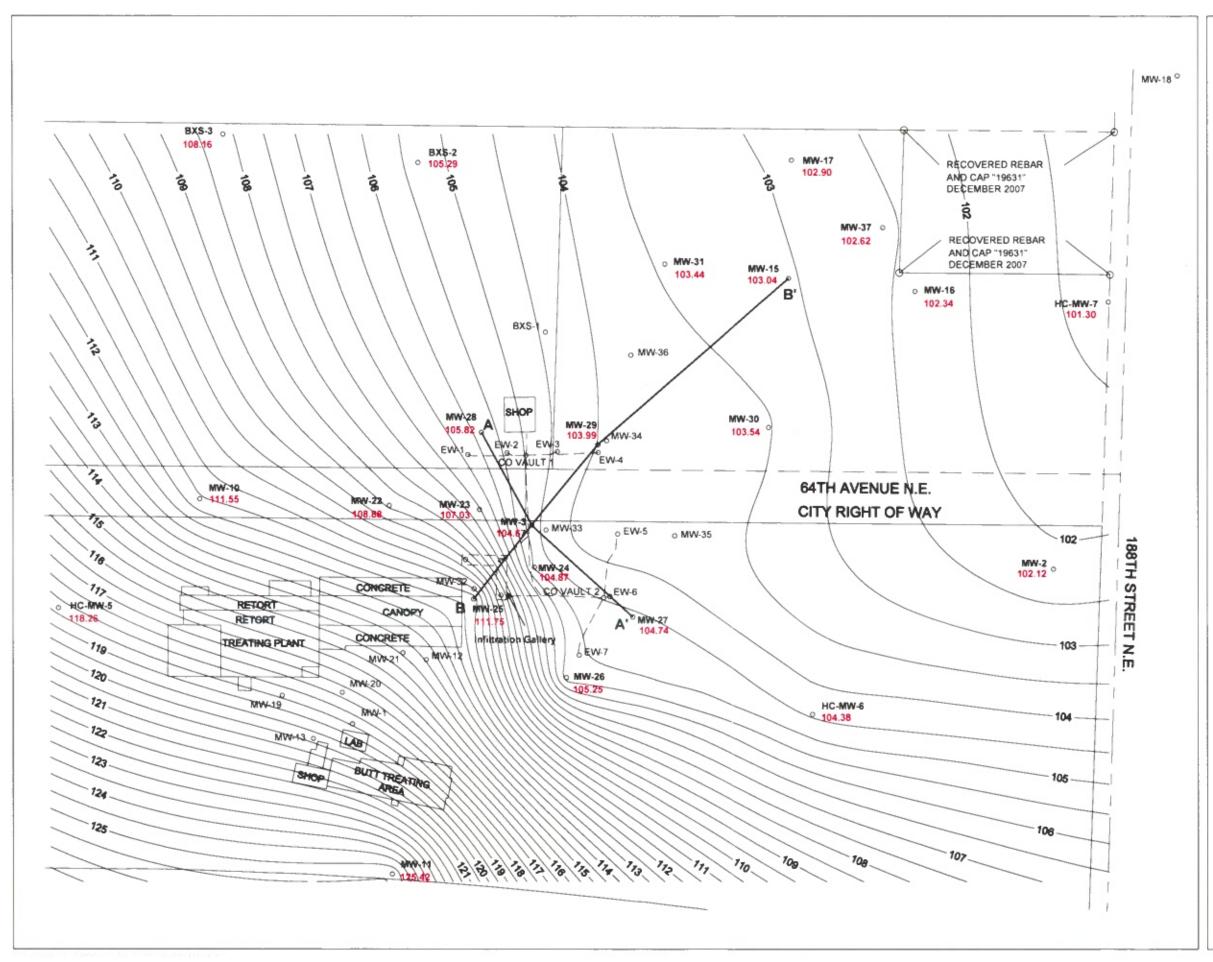
- 1. All elevations exist in NAVD88.
- Groundwater elevation contours interpolated at 0.5 ft intervals using kriging geostatistical methodology.
- Bold well identifications and groundwater levels indicate the points that were used to generate groundwater elevation contours.





MAP NOTES: Data Sources Geomatrix, Appendix C, Stand-Alone Data Document (2014), December 2014





NOVEMBER 25, 2008 Groundwater Elevation Contour Map Baseline Elevations

Former J.H. Baxter Wood Treating Facility Arlington, Washington

LEGEND

O Monitoring Well Identification and MW-15 Groundwater Elevation (ft.)

106 __ Groundwater Elevation Contour (ft.)

NOTES:

- 1. All elevations exist in NAVD88.
- Groundwater elevation contours interpolated at 0.5 ft intervals using kriging geostatistical methodology.
- Bold well identifications and groundwater levels indicate the points that were used to generate groundwater elevation contours.

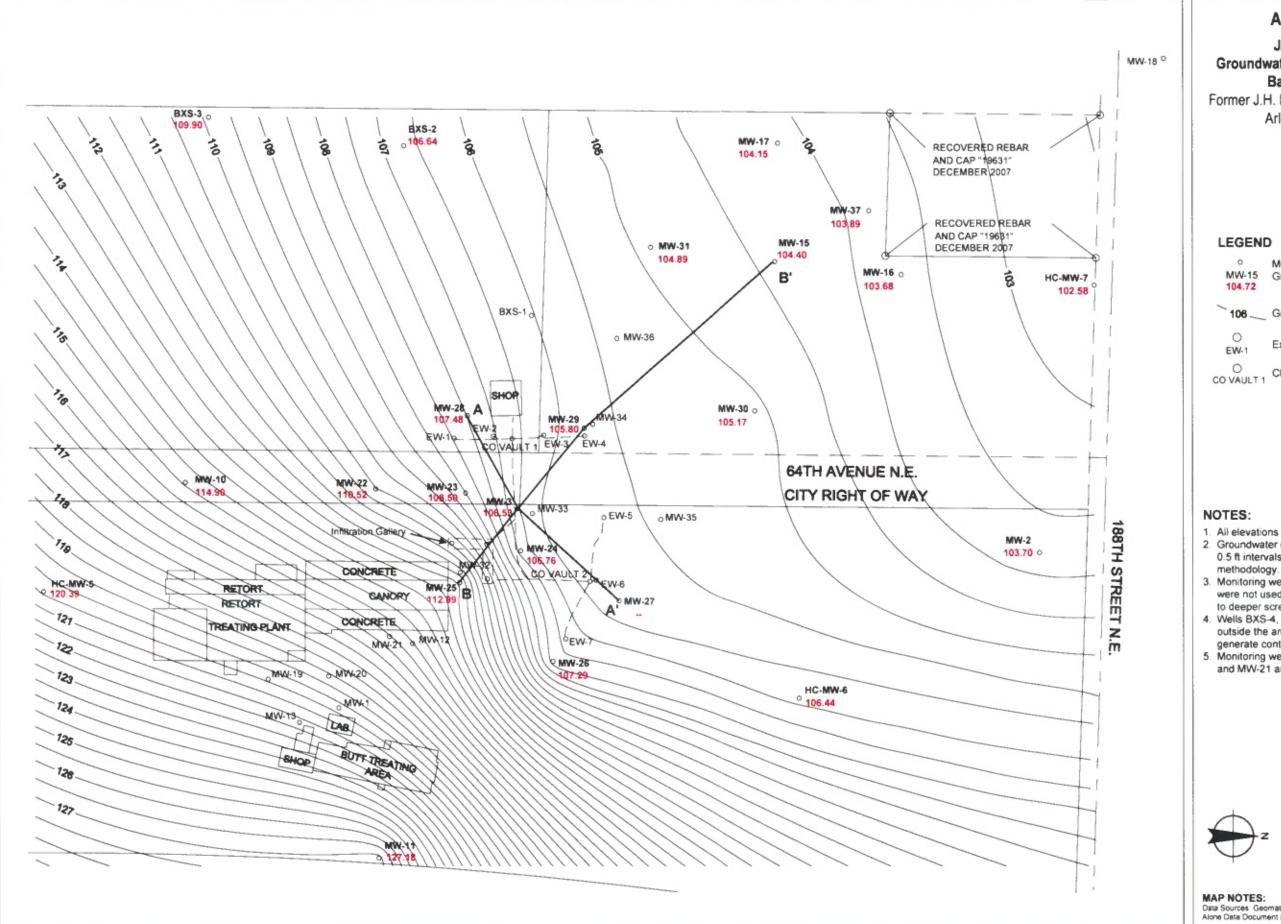




MAP NOTES:

Data Sources: Geomatrix, Appendix C, Stand-Alone Data Document (2014). December 2014





JANUARY 6, 2009 Groundwater Elevation Contour Map **Baseline Elevations**

Former J.H. Baxter Wood Treating Facility Arlington, Washington

Monitoring Well Identification and Groundwater Elevation (ft.)

Groundwater Elevation Contour (ft.)

Extraction Well Identification

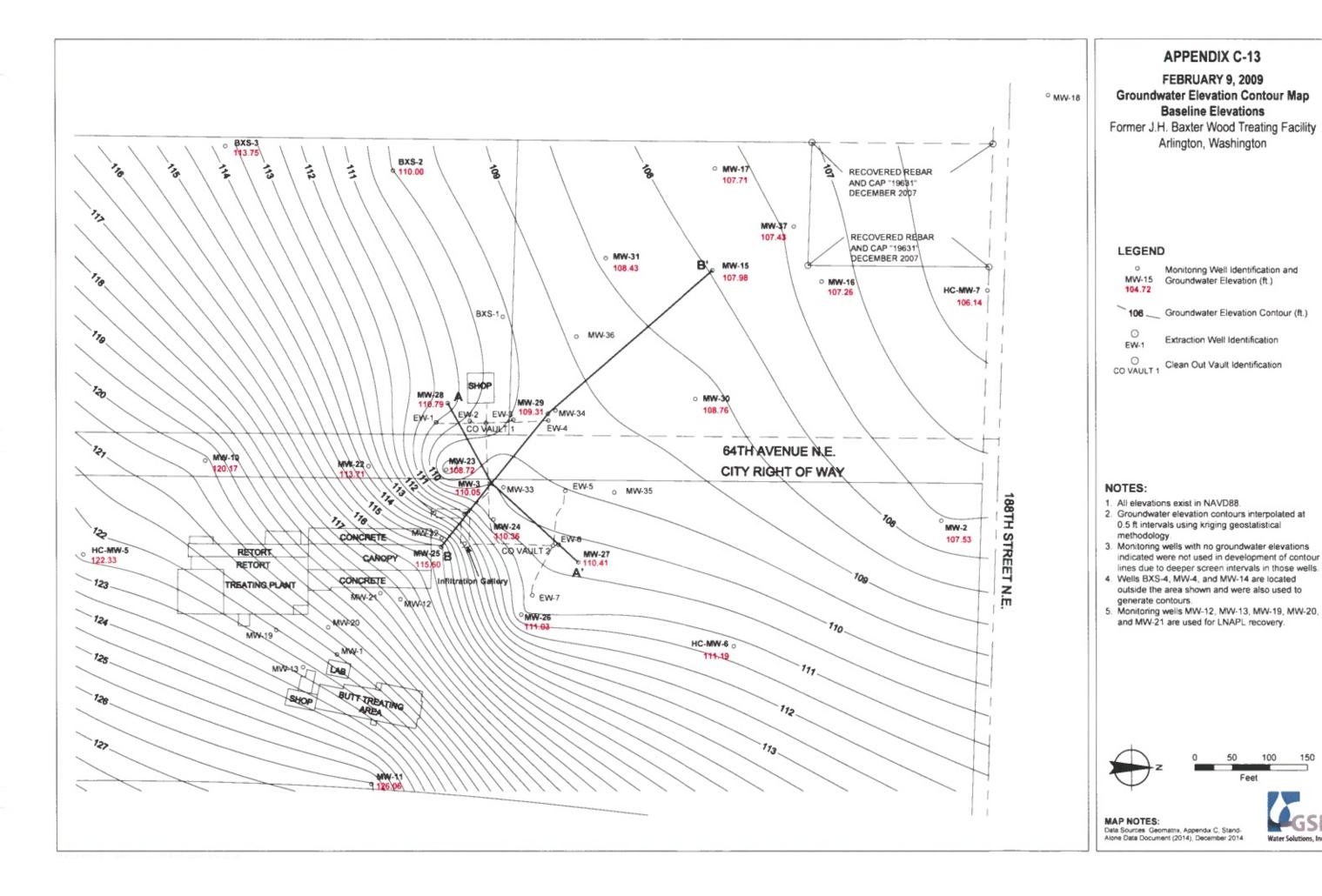
CO VAULT 1 Clean Out Vault Identification

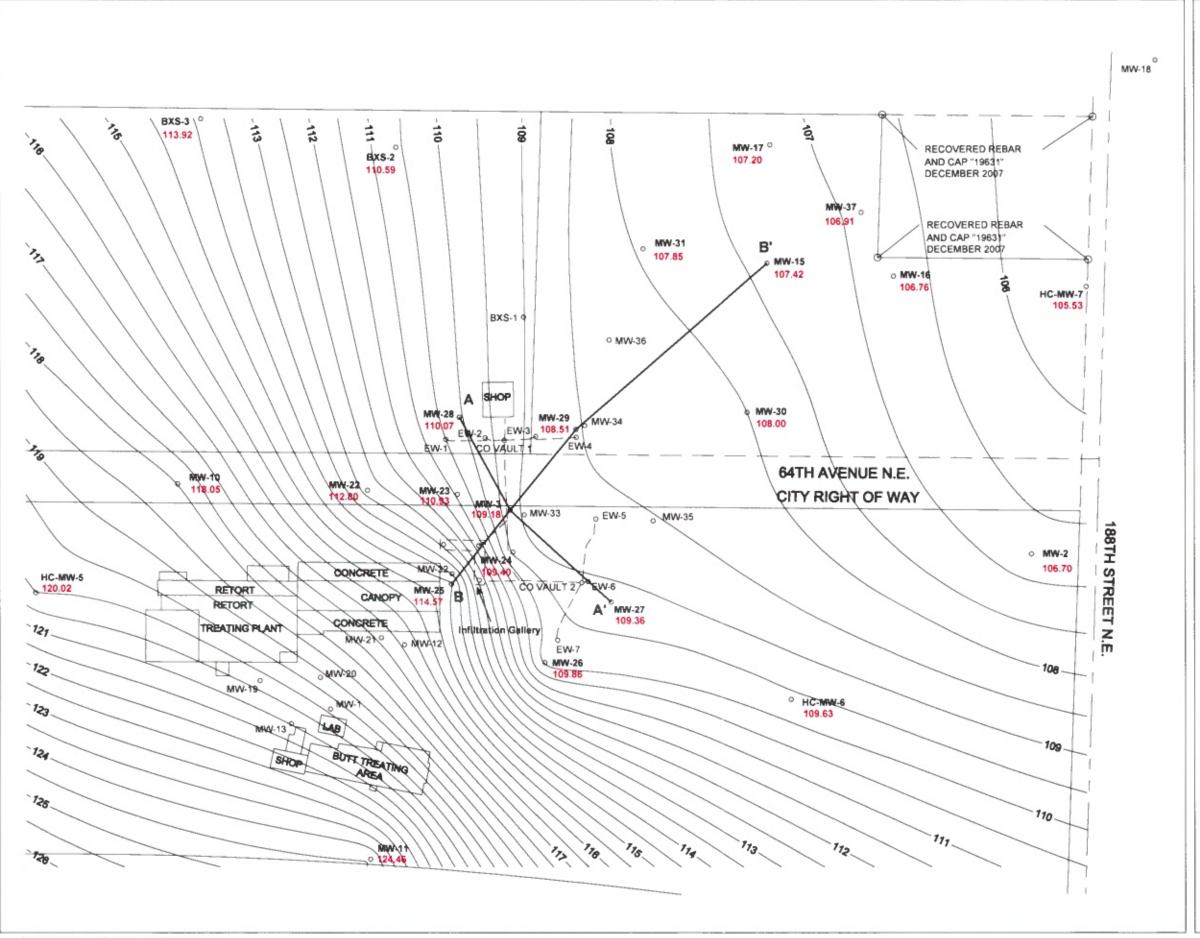
- 1. All elevations exist in NAVD88.
- 2. Groundwater elevation contours interpolated at 0.5 ft intervals using kriging geostatistical
- 3. Monitoring wells without groundwater elevations were not used in development of contour lines due to deeper screen interval.
- 4. Wells BXS-4, MW-4, and MW-14 are located outside the area shown and were also used to generate contours.
- 5. Monitoring wells MW-12, MW-13, MW-19, MW-20, and MW-21 are used for LNAPL recovery.



Data Sources Geomatrix, Appendix C, Stand-Alone Data Document (2014), December 2014







MARCH 5, 2009 Groundwater Elevation Contour Map Baseline Elevations

Former J.H. Baxter Wood Treating Facility
Arlington, Washington

LEGEND

O Monitoring Well Identification and MW-15 Groundwater Elevation (ft.) 104.72

106 __ Groundwater Elevation Contour (ft.)

EW-1 Extraction Well Identification

CO VAULT 1 Clean Out Vault Identification

NOTES:

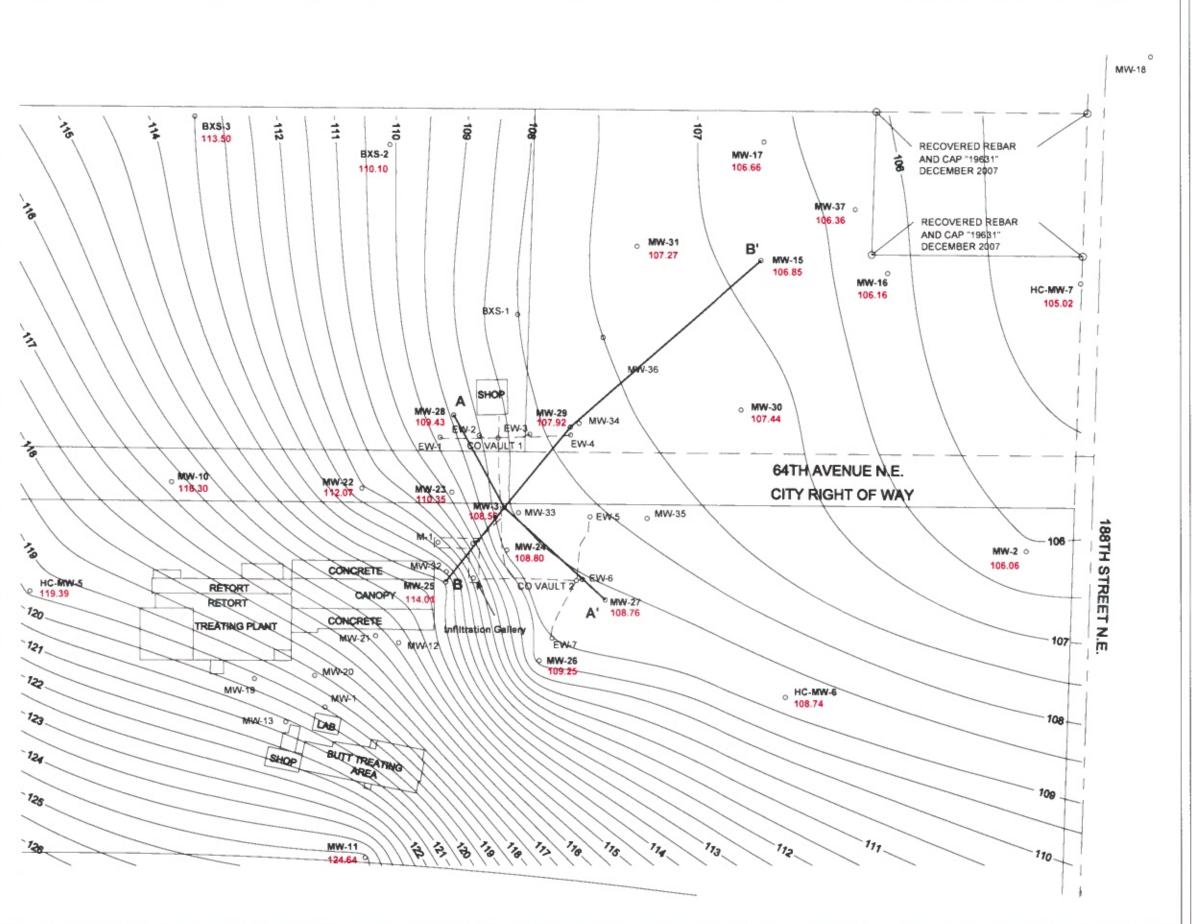
- 1. All elevations exist in NAVD88.
- Groundwater elevation contours interpolated at 0.5 ft intervals using kriging geostatistical methodology.
- Monitoring wells with no groundwater elevations indicated were not used in development of contour lines due to deeper screen intervals in those wells.
- Wells BXS-4, MW-4, and MW-14 are located outside the area shown and were also used to generate contours.
- Monitoring wells MW-12, MW-13, MW-19, MW-20, and MW-21 are used for LNAPL recovery.





MAP NOTES: Data Sources: Geomatrix, Appendix C, Stand-Alone Data Document (2014), December 2014





APRIL 1, 2009 Groundwater Elevation Contour Map Baseline Elevations

Former J.H. Baxter Wood Treating Facility
Arlington, Washington

LEGEND

Monitoring Well Identification and MW-15 Groundwater Elevation (ft.)

106 __ Groundwater Elevation Contour (ft.)

EW-1 Extraction Well Identification

CO VAULT 1 Clean Out Vault Identification

NOTES:

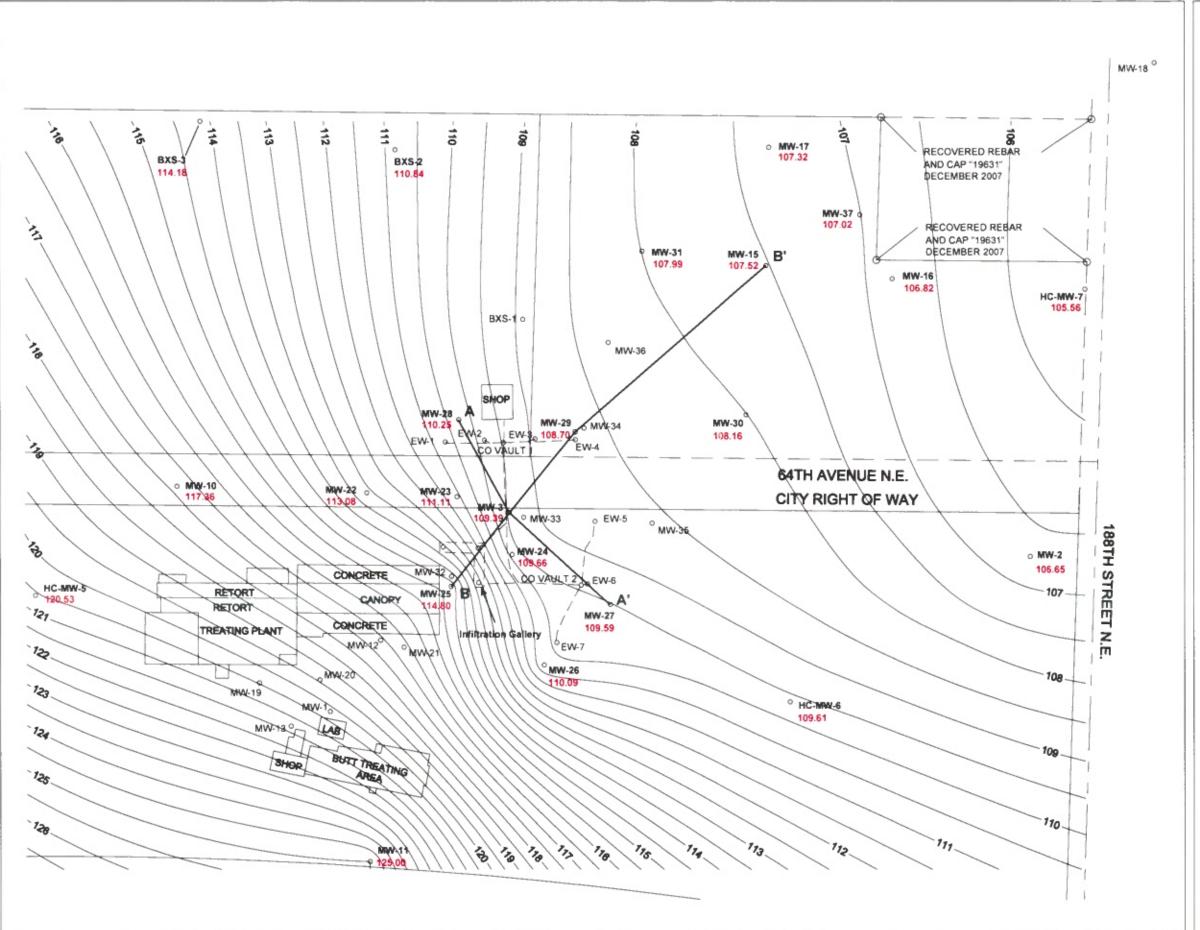
- 1. All elevations exist in NAVD88.
- Groundwater elevation contours interpolated at 0.5 ft intervals using kriging geostatistical methodology.
- Monitoring wells with no groundwater elevations indicated were not used in development of contour lines due to deeper screen intervals in those wells.
- Wells BXS-4, MW-4, and MW-14 are located outside the area shown and were also used to generate contours.
- Monitoring wells MW-12, MW-13, MW-19, MW-20, and MW-21 are used for LNAPL recovery.





MAP NOTES: Data Sources: Geomatrix, Appendix C, Stand-Alone Data Document (2014), December 2014





MAY 4, 2009

Groundwater Elevation Contour Map Baseline Elevations

Former J.H. Baxter Wood Treating Facility Arlington, Washington

LEGEND

MW-15 Groundwater Elevation (ft.)

106 __ Groundwater Elevation Contour (ft.)

EW-1 Extraction Well Identification

CO VAULT 1 Clean Out Vault Identification

NOTES:

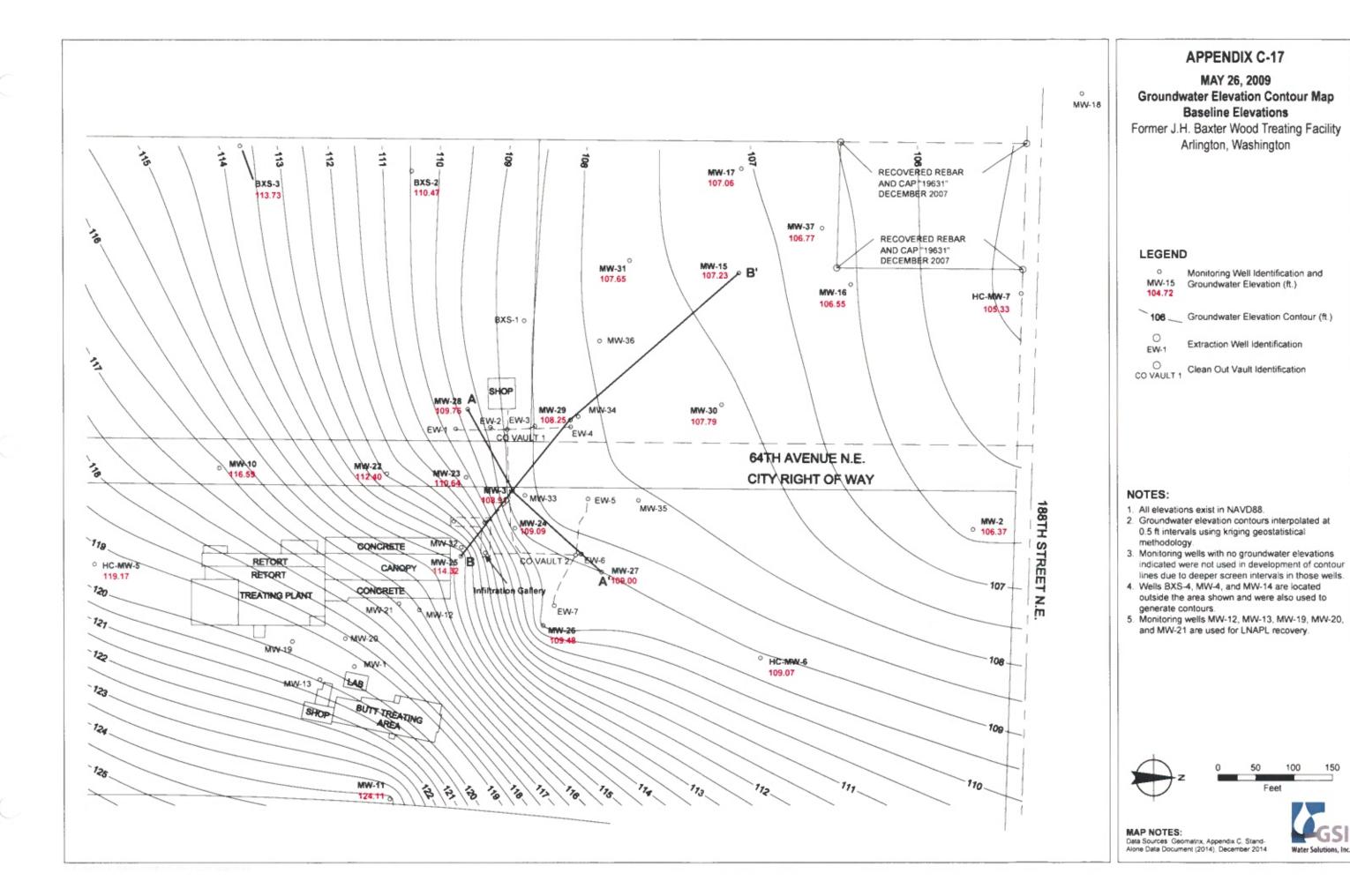
- 1. All elevations exist in NAVD88.
- Groundwater elevation contours interpolated at 0.5 ft intervals using kriging geostatistical methodology.
- Monitoring wells with no groundwater elevations indicated were not used in development of contour lines due to deeper screen intervals in those wells.
- Wells BXS-4, MW-4, and MW-14 are located outside the area shown and were also used to generate contours.
- Monitoring wells MW-12, MW-13, MW-19, MW-20, and MW-21 are used for LNAPL recovery.

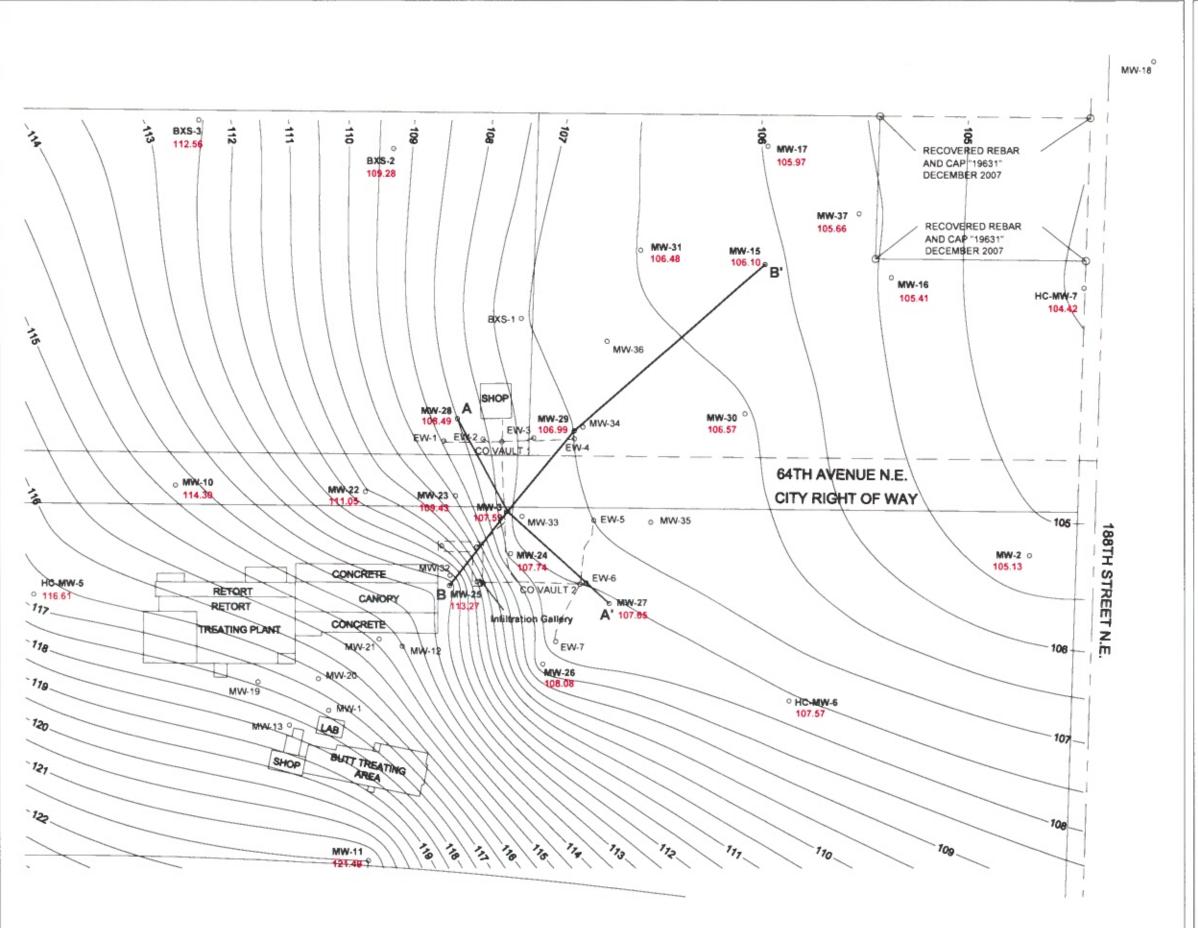




MAP NOTES: Data Sources Geomatrix, Appendix C, Stand-Alone Data Document (2014), December 2014







JULY 8, 2009 **Groundwater Elevation Contour Map**

Former J.H. Baxter Wood Treating Facility Arlington, Washington

Baseline Elevations

LEGEND

Monitoring Well Identification and MW-15 Groundwater Elevation (ft.) 104.72

Groundwater Elevation Contour (ft.)

EW-1

Extraction Well Identification

CO VAULT 1 Clean Out Vault Identification

NOTES:

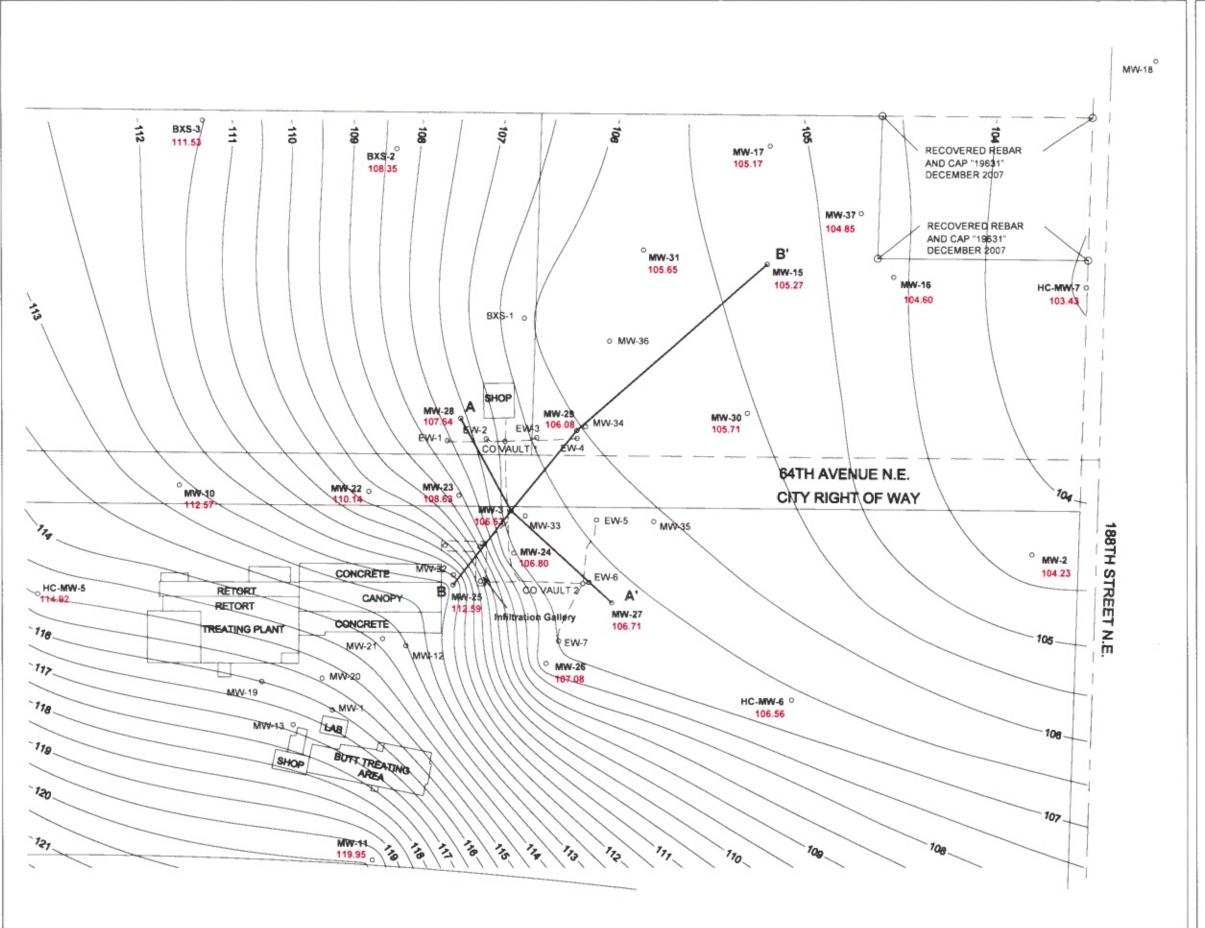
- 1. All elevations exist in NAVD88.
- 2. Groundwater elevation contours interpolated at 0.5 ft intervals using kriging geostatistical methodology.
- 3. Monitoring wells with no groundwater elevations indicated were not used in development of contour lines due to deeper screen intervals in those wells.
- 4. Wells BXS-4, MW-4, and MW-14 are located outside the area shown and were also used to generate contours.
- Monitoring wells MW-12, MW-13, MW-19, MW-20, and MW-21 are used for LNAPL recovery.





MAP NOTES: Data Sources: Geomatrix, Appendix C, Stand-Alone Data Document (2014), December 2014





AUGUST 3, 2009 Groundwater Elevation Contour Map Baseline Elevations

Former J.H. Baxter Wood Treating Facility
Arlington, Washington

LEGEND

Monitoring Well Identification and MW-15 Groundwater Elevation (ft.)

106 __ Groundwater Elevation Contour (ft.)

EW-1 Extraction Well Identification

CO VAULT 1 Clean Out Vault Identification

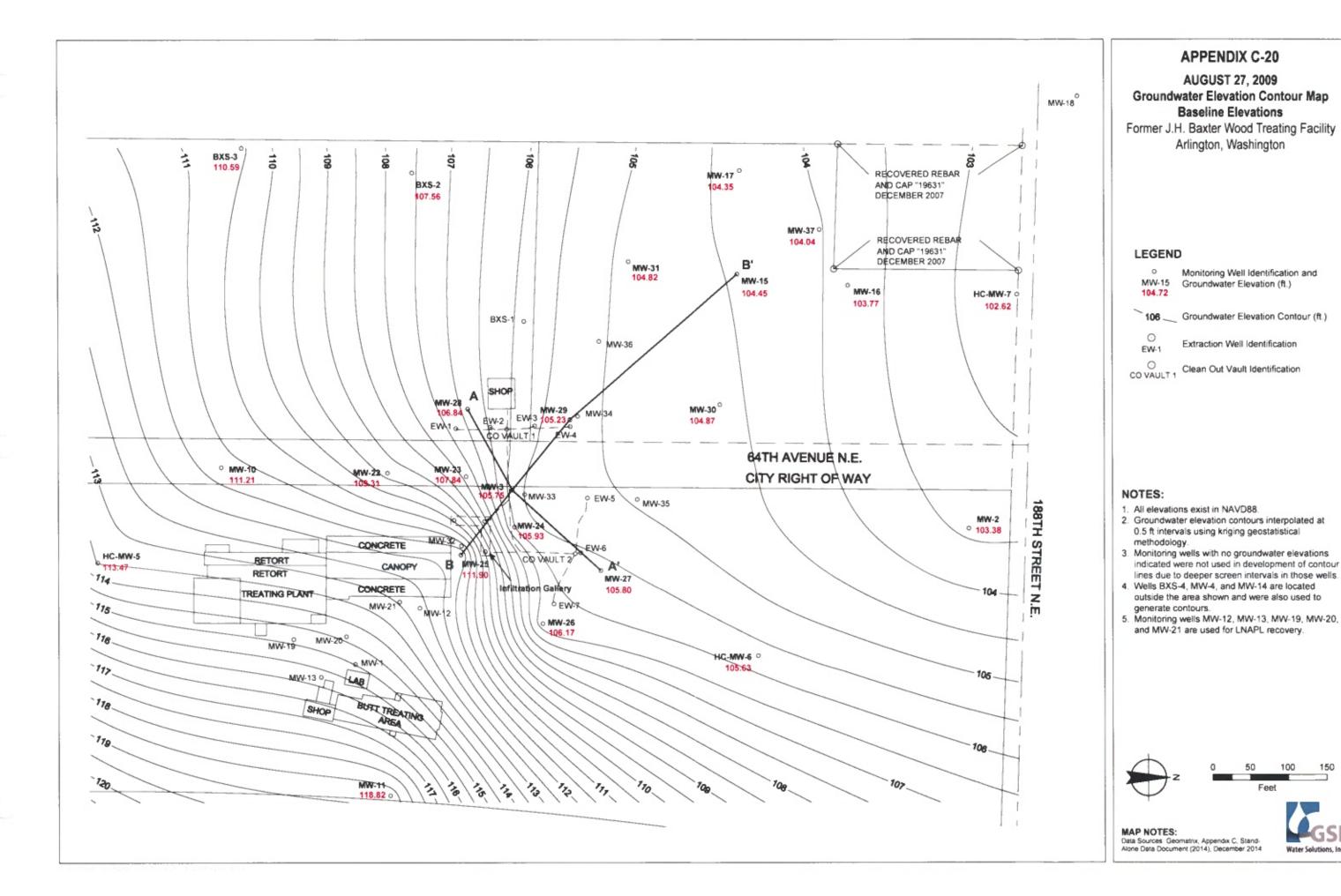
NOTES:

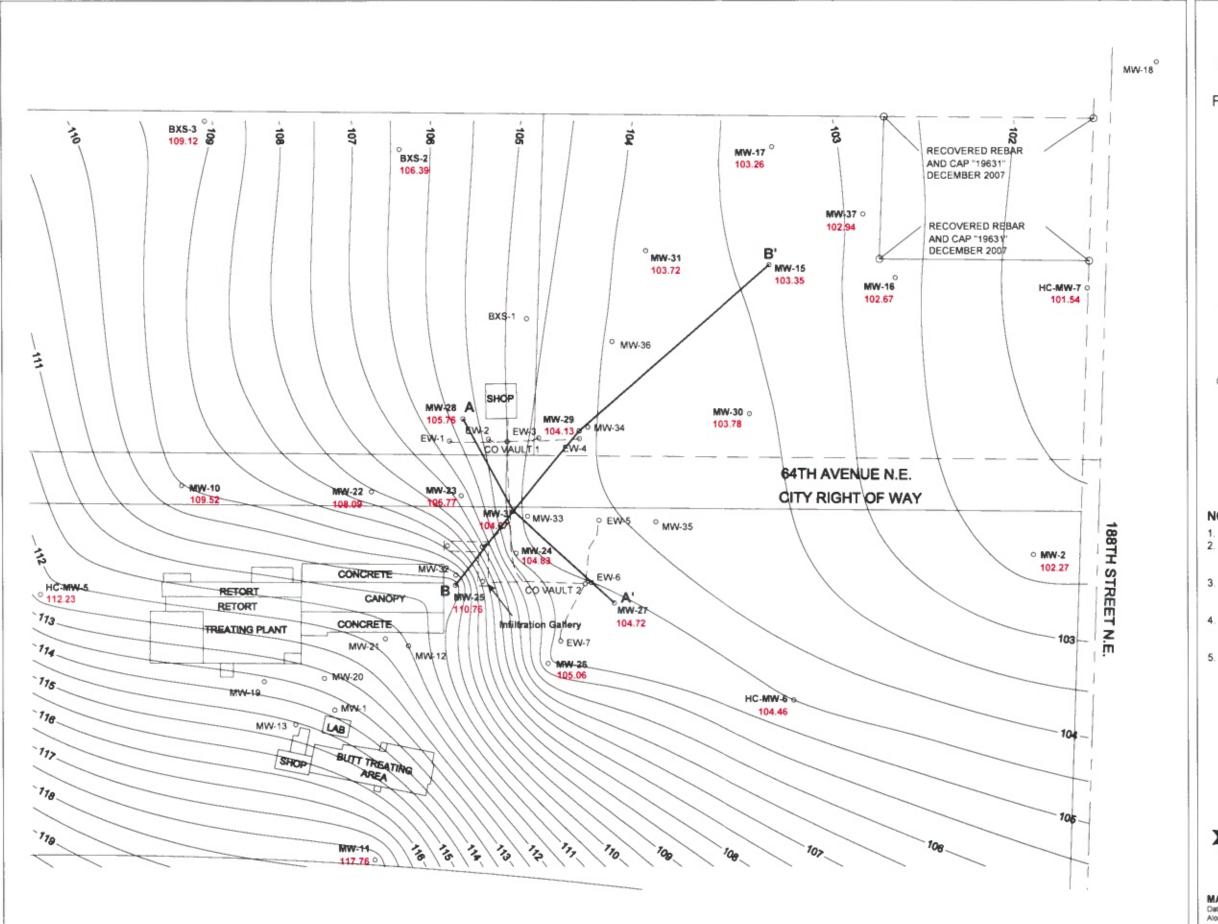
- 1. All elevations exist in NAVD88.
- Groundwater elevation contours interpolated at 0.5 ft intervals using kriging geostatistical methodology.
- Monitoring wells with no groundwater elevations indicated were not used in development of contour lines due to deeper screen intervals in those wells.
- Wells BXS-4, MW-4, and MW-14 are located outside the area shown and were also used to generate contours.
- Monitoring wells MW-12, MW-13, MW-19, MW-20, and MW-21 are used for LNAPL recovery.
- Depth to water measurements at BXS-1, BXS-2, BXS-3, and BXS-4 were performed on August 4, 2009.



MAP NOTES: Data Sources Geomatrix, Appendix C, Stand-Alone Data Document (2014), December 2014







SEPTEMBER 30, 2009 Groundwater Elevation Contour Map Baseline Elevations

Former J.H. Baxter Wood Treating Facility
Arlington, Washington

LEGEND

Monitoring Well Identification and
 MW-15
 Groundwater Elevation (ft.)

106 ___ Groundwater Elevation Contour (ft.)

EW-1 Extraction Well Identification

O CO VAULT 1 Clean Out Vault Identification

NOTES:

- 1. All elevations exist in NAVD88.
- Groundwater elevation contours interpolated at 0.5 ft intervals using kriging geostatistical methodology.
- Monitoring wells with no groundwater elevations indicated were not used in development of contour lines due to deeper screen intervals in those wells.
- Wells BXS-4, MW-4, and MW-14 are located outside the area shown and were also used to generate contours.
- Monitoring wells MW-12, MW-13, MW-19, MW-20, and MW-21 are used for LNAPL recovery.

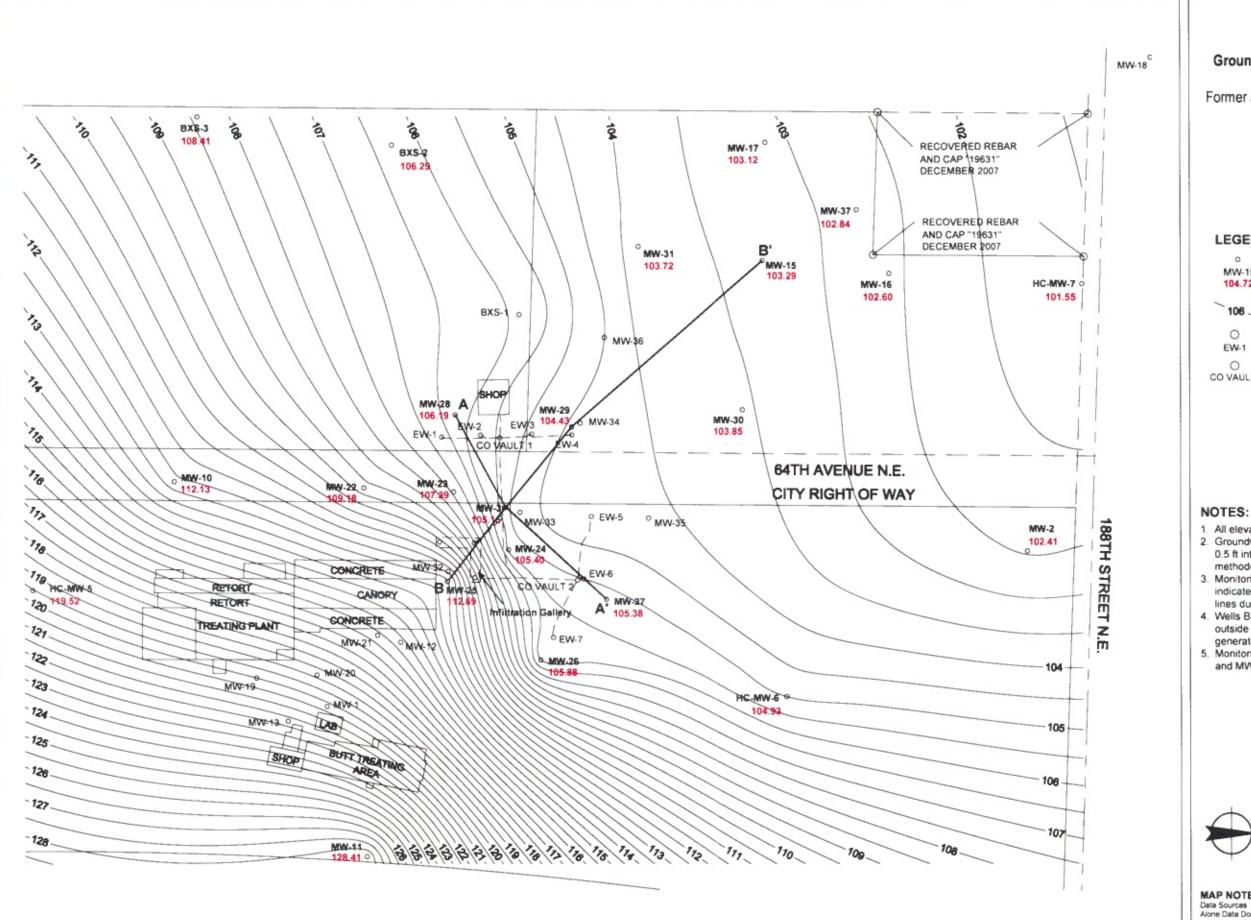




MAP NOTES:

Data Sources: Geomatrix, Appendix C, Stand-Alone Data Document (2014), December 2014





NOVEMBER 16, 2009 Groundwater Elevation Contour Map Baseline Elevations

Former J.H. Baxter Wood Treating Facility Arlington, Washington

LEGEND

Monitoring Well Identification and MW-15 Groundwater Elevation (ft.)

106 __ Groundwater Elevation Contour (ft.)

Extraction Well Identification

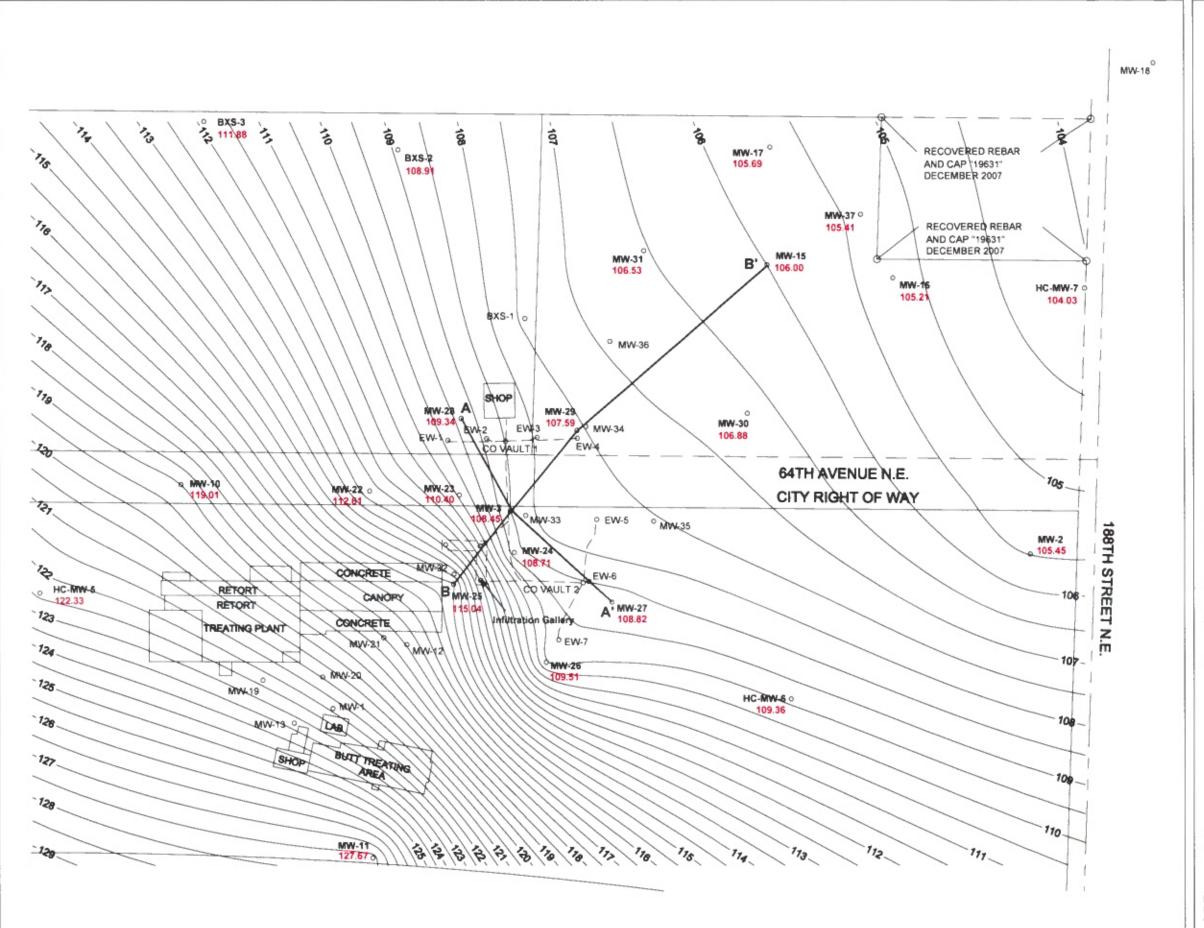
CO VAULT 1 Clean Out Vault Identification

- 1. All elevations exist in NAVD88.
- 2. Groundwater elevation contours interpolated at 0.5 ft intervals using kriging geostatistical methodology.
- 3. Monitoring wells with no groundwater elevations indicated were not used in development of contour lines due to deeper screen intervals in those wells.
- 4. Wells BXS-4, MW-4, and MW-14 are located outside the area shown and were also used to generate contours.
- 5. Monitoring wells MW-12, MW-13, MW-19, MW-20, and MW-21 are used for LNAPL recovery.



MAP NOTES: Data Sources: Geomainx, Appendix C, Stand-Alone Data Document (2014), December 2014





DECEMBER 29, 2009 Groundwater Elevation Contour Map Baseline Elevations

Former J.H. Baxter Wood Treating Facility Arlington, Washington

LEGEND

 Monitoring Well Identification and MW-15 Groundwater Elevation (ft.)

104.72

106 __ Groundwater Elevation Contour (ft.)

Extraction Well Identification

CO VAULT 1 Clean Out Vault Identification

NOTES:

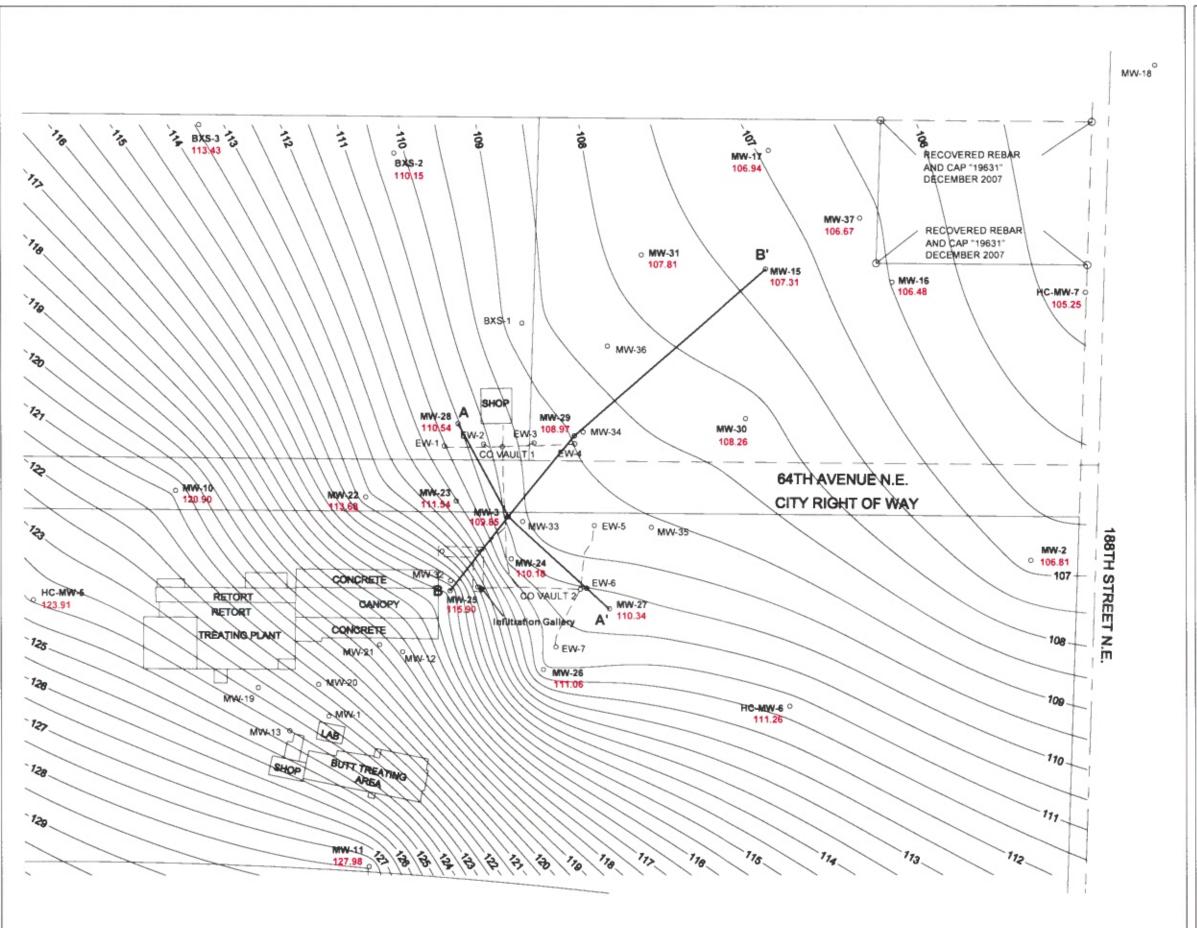
- 1. All elevations exist in NAVD88.
- Groundwater elevation contours interpolated at 0.5 ft intervals using kriging geostatistical methodology.
- Monitoring wells with no groundwater elevations indicated were not used in development of contour lines due to deeper screen intervals in those wells.
- Wells BXS-4, MW-4, and MW-14 are located outside the area shown and were also used to generate contours.
- Monitoring wells MW-12, MW-13, MW-19, MW-20, and MW-21 are used for LNAPL recovery.





MAP NOTES: Data Sources: Geomatrix, Appendix C, Stand-Alone Data Document (2014), December 2014





JANUARY 25, 2010 Groundwater Elevation Contour Map Baseline Elevations

Former J.H. Baxter Wood Treating Facility
Arlington, Washington

LEGEND

O Monitoring Well Identification and MW-15 Groundwater Elevation (ft.)

106 __ Groundwater Elevation Contour (ft.)

Extraction Well Identification

CO VAULT 1 Clean Out Vault Identification

NOTES:

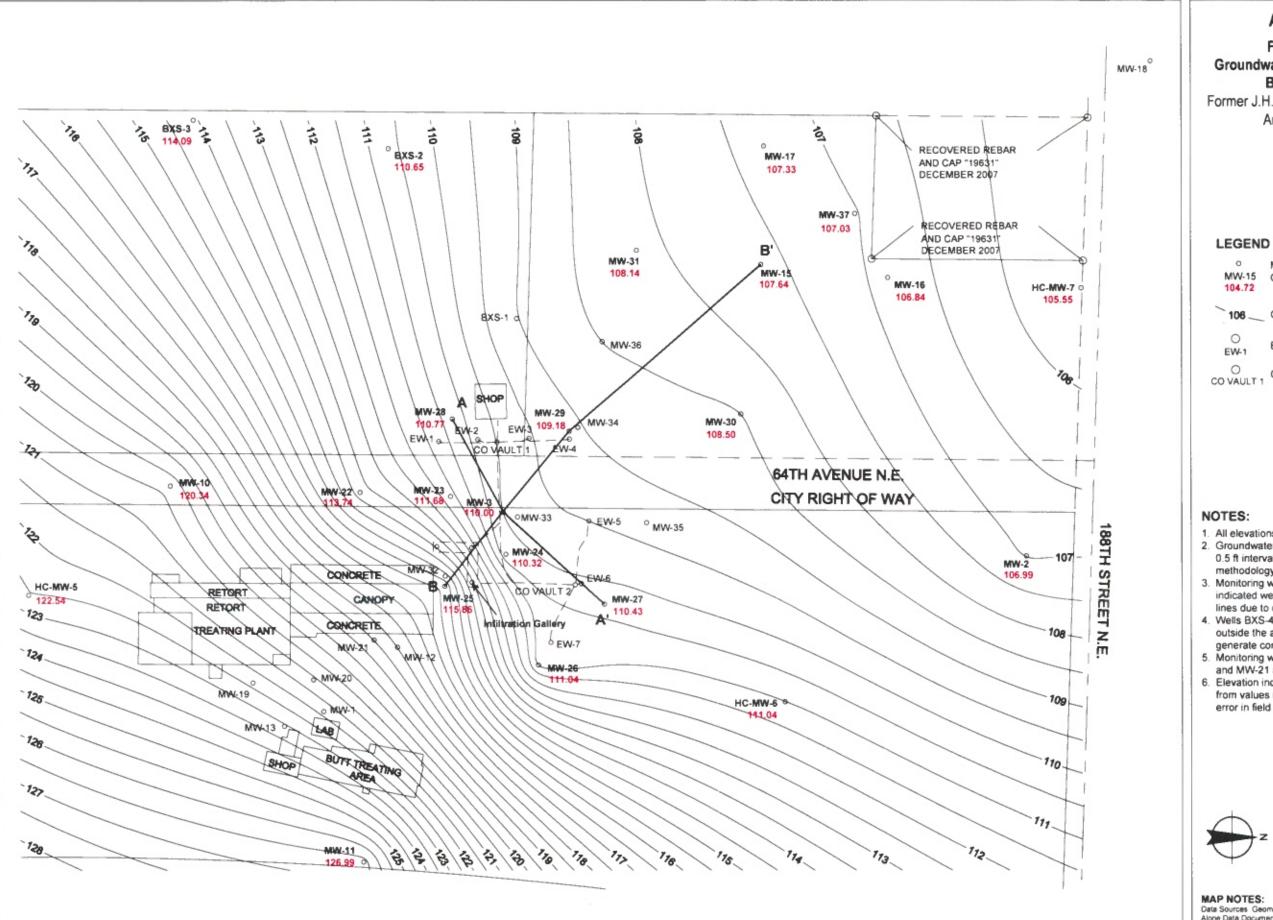
- All elevations exist in NAVD88.
- Groundwater elevation contours interpolated at 0.5 ft intervals using kriging geostatistical methodology.
- Monitoring wells with no groundwater elevations indicated were not used in development of contour lines due to deeper screen intervals in those wells.
- Wells BXS-4, MW-4, and MW-14 are located outside the area shown and were also used to generate contours.
- Monitoring wells MW-12, MW-13, MW-19, MW-20, and MW-21 are used for LNAPL recovery.





MAP NOTES: Oata Sources Geomatrix, Appendix C, Stand-Alone Data Document (2014), December 2014





FEBRUARY 8, 2010 Groundwater Elevation Contour Map Baseline Elevations

Former J.H. Baxter Wood Treating Facility Arlington, Washington

Monitoring Well Identification and MW-15 Groundwater Elevation (ft.)

106 __ Groundwater Elevation Contour (ft.)

Extraction Well Identification

CO VAULT 1 Clean Out Vault Identification

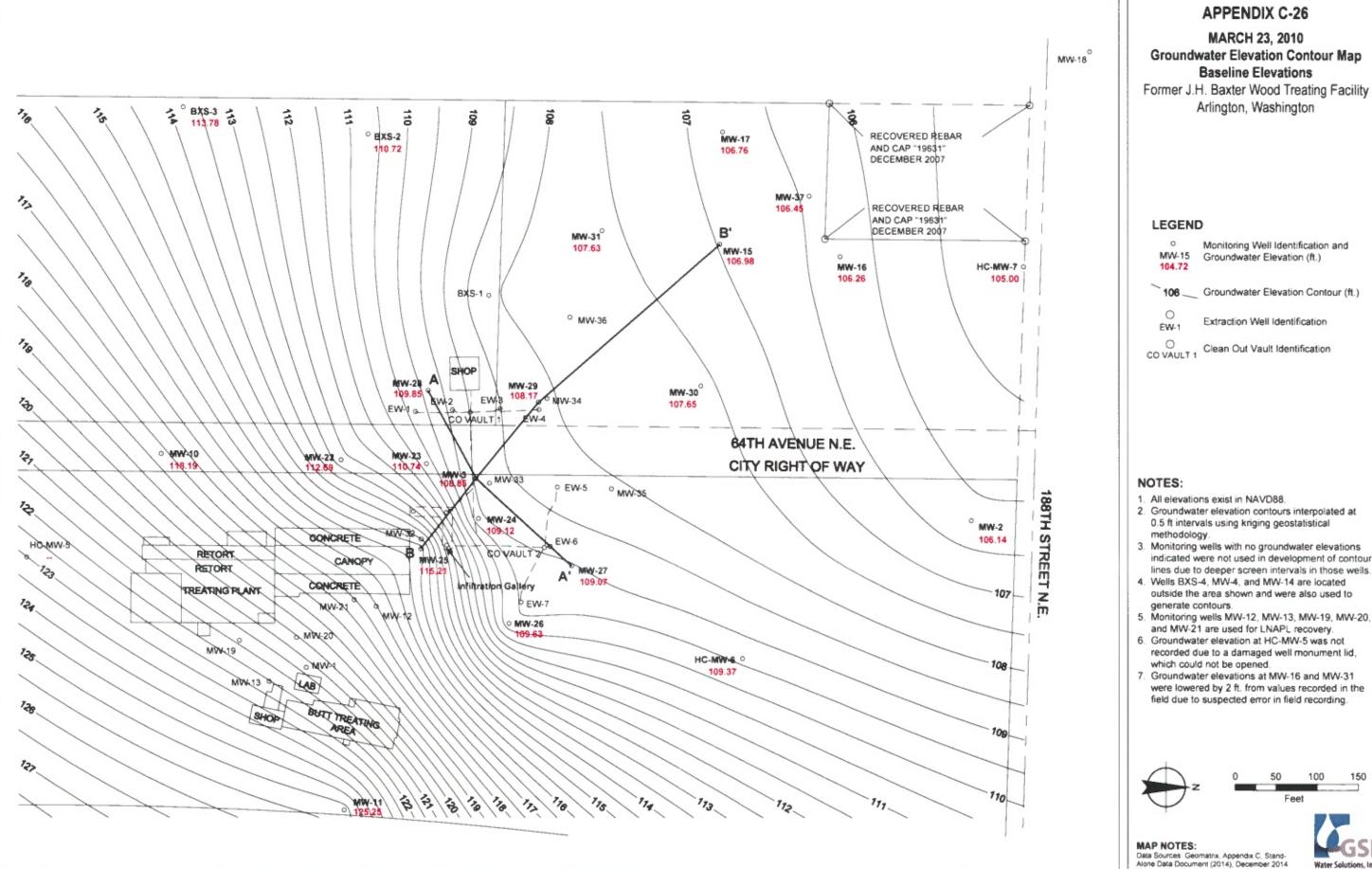
- 1. All elevations exist in NAVD88.
- 2. Groundwater elevation contours interpolated at 0.5 ft intervals using kriging geostatistical methodology.
- 3. Monitoring wells with no groundwater elevations indicated were not used in development of contour lines due to deeper screen intervals in those wells.
- 4. Wells BXS-4, MW-4, and MW-14 are located outside the area shown and were also used to generate contours.
- 5. Monitoring wells MW-12, MW-13, MW-19, MW-20, and MW-21 are used for LNAPL recovery.
- 6. Elevation indicated for MW-23 was raised by 3 feet from values recorded in the field due to suspected error in field recording.





MAP NOTES: Data Sources Geomatrix, Appendix C, Stand-Alone Data Document (2014), December 2014





MARCH 23, 2010 Groundwater Elevation Contour Map **Baseline Elevations**

Former J.H. Baxter Wood Treating Facility Arlington, Washington

> Monitoring Well Identification and Groundwater Elevation (ft.)

Groundwater Elevation Contour (ft.)

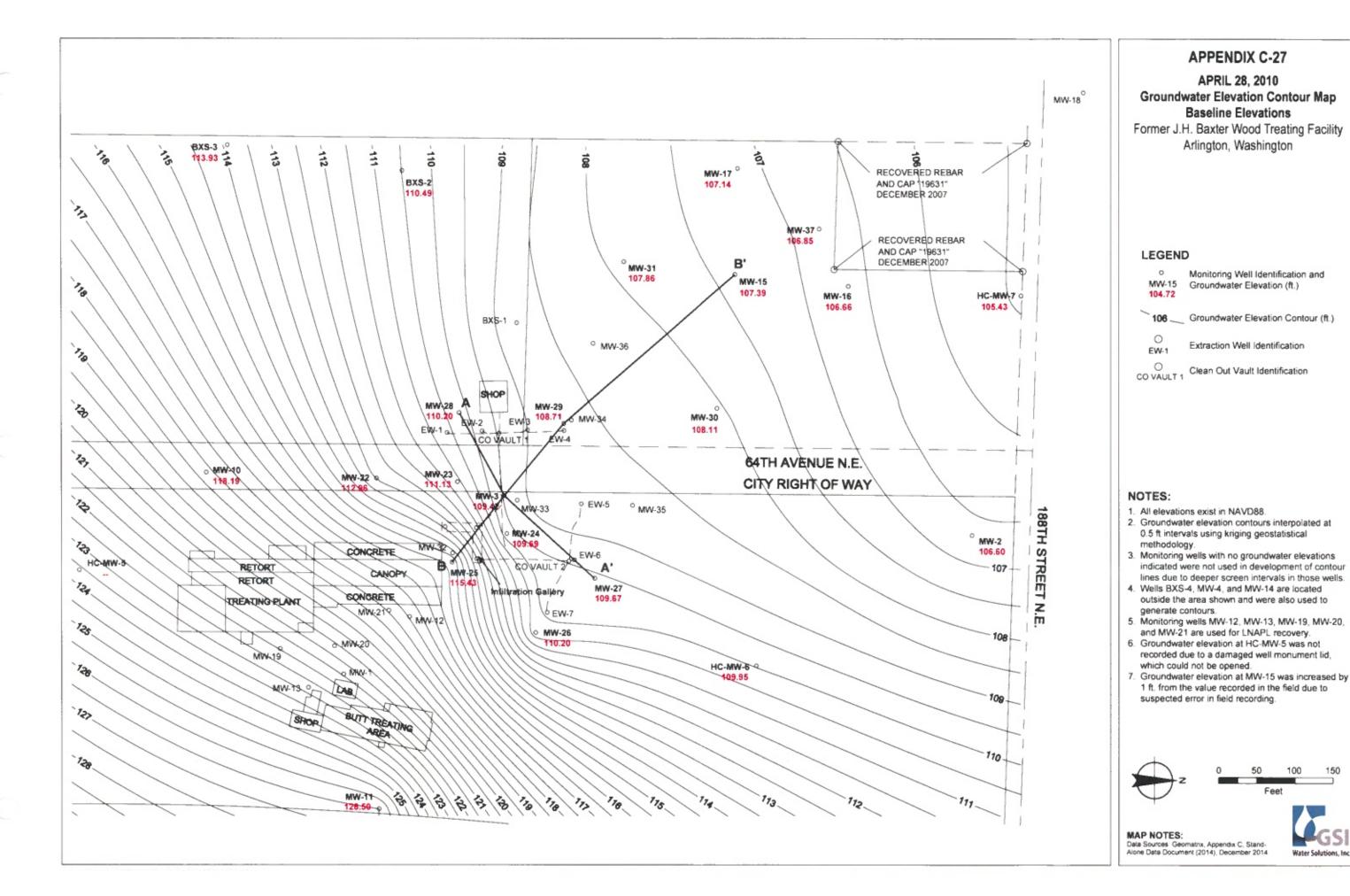
Extraction Well Identification

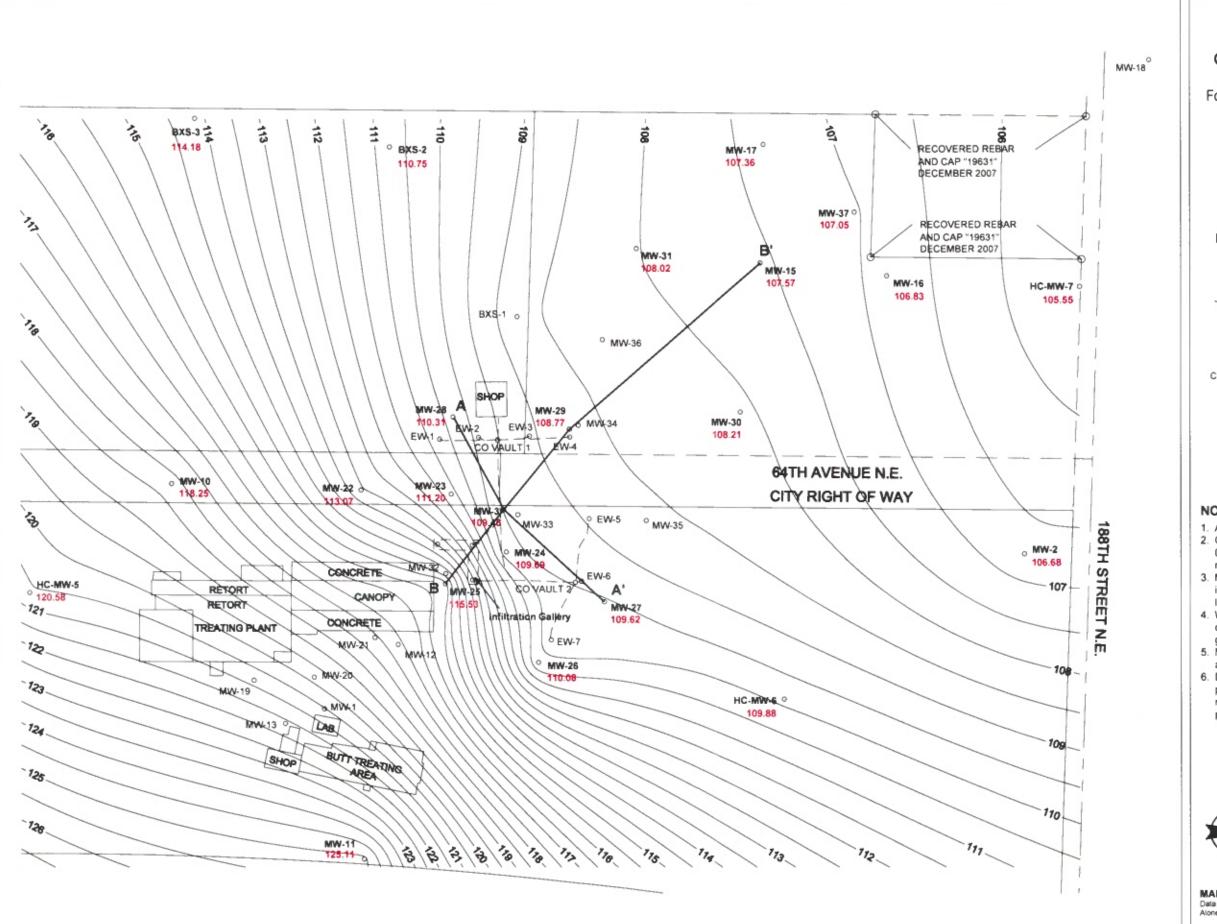
- 0.5 ft intervals using kriging geostatistical
- 3. Monitoring wells with no groundwater elevations indicated were not used in development of contour lines due to deeper screen intervals in those wells.
- outside the area shown and were also used to
- and MW-21 are used for LNAPL recovery.
- recorded due to a damaged well monument lid,
- 7. Groundwater elevations at MW-16 and MW-31 were lowered by 2 ft. from values recorded in the field due to suspected error in field recording.



Data Sources Geomatrix Appendix C Stand-







MAY 24, 2010 Groundwater Elevation Contour Map Baseline Elevations

Former J.H. Baxter Wood Treating Facility Arlington, Washington

LEGEND

O Monitoring Well Identification and MW-15 Groundwater Elevation (ft.)

106 __ Groundwater Elevation Contour (ft.)

Extraction Well Identification

O Clean Out Vault Identification

NOTES:

- 1. All elevations exist in NAVD88.
- Groundwater elevation contours interpolated at 0.5 ft intervals using kriging geostatistical methodology.
- Monitoring wells with no groundwater elevations indicated were not used in development of contour lines due to deeper screen intervals in those wells.
- Wells BXS-4, MW-4, and MW-14 are located outside the area shown and were also used to generate contours.
- Monitoring wells MW-12, MW-13, MW-19, MW-20, and MW-21 are used for LNAPL recovery.
- Depth to water measurement at MW-26 was performed 5/25/10. All depth to water measurements were performed within a 24 hour period.

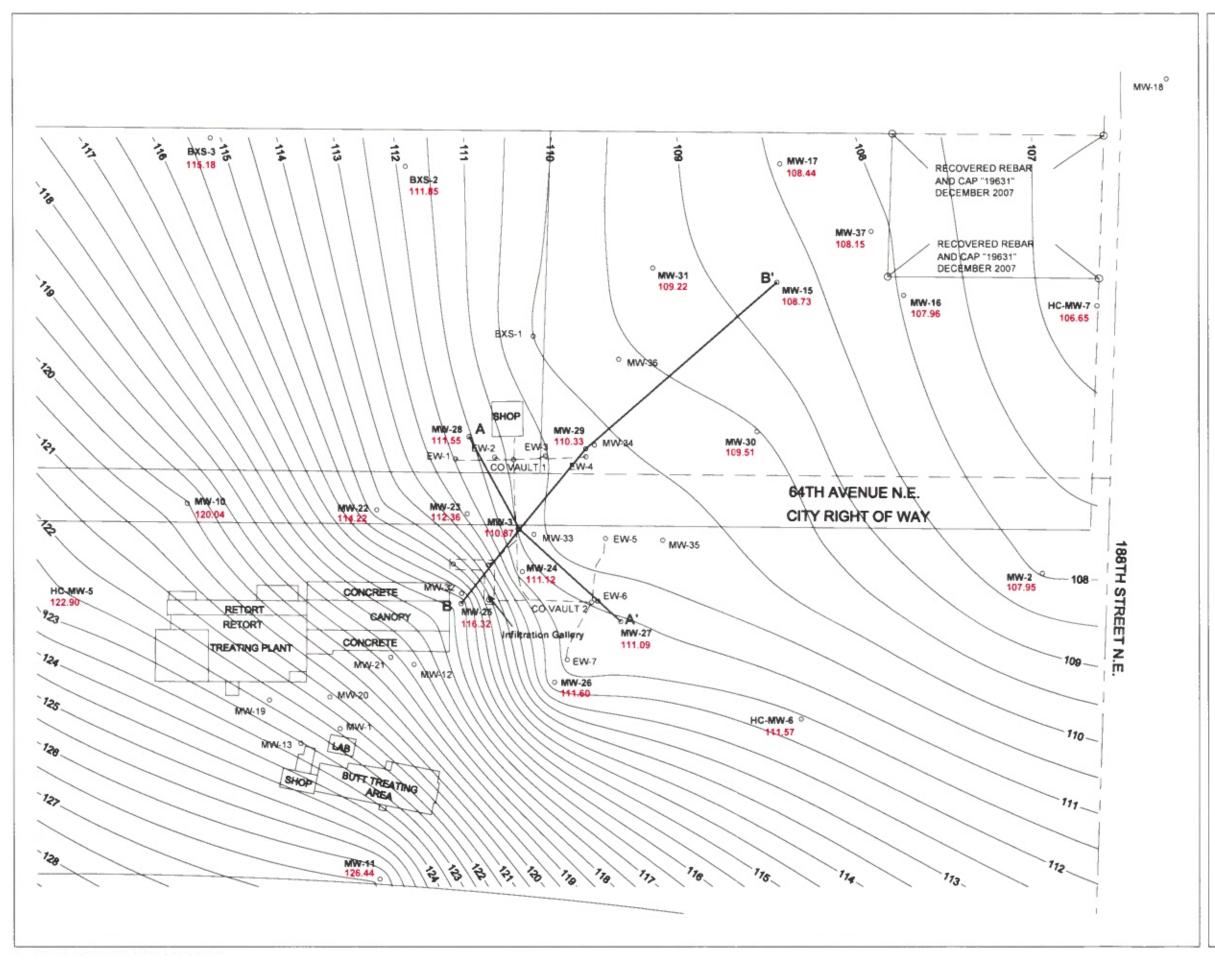


50 100 150 Feet

MAP NOTES:

Data Sources: Geomatrix, Appendix C. Stand-Alone Data Document (2014), December 2014





JUNE 29, 2010 Groundwater Elevation Contour Map Baseline Elevations

Former J.H. Baxter Wood Treating Facility Arlington, Washington

LEGEND

Monitoring Well Identification and MW-15 Groundwater Elevation (ft.)

106 __ Groundwater Elevation Contour (ft.)

EW-1 Extraction Well Identification

O CO VAULT 1 Clean Out Vault Identification

NOTES:

- 1. All elevations exist in NAVD88.
- Groundwater elevation contours interpolated at 0.5 ft intervals using kriging geostatistical methodology.
- Monitoring wells with no groundwater elevations indicated were not used in development of contour lines due to deeper screen intervals in those wells.
- Wells BXS-4, MW-4, and MW-14 are located outside the area shown and were also used to generate contours.
- Monitoring wells MW-12, MW-13, MW-19, MW-20, and MW-21 are used for LNAPL recovery.
- Extraction well EW-4 was not in operation during this monitoring event.

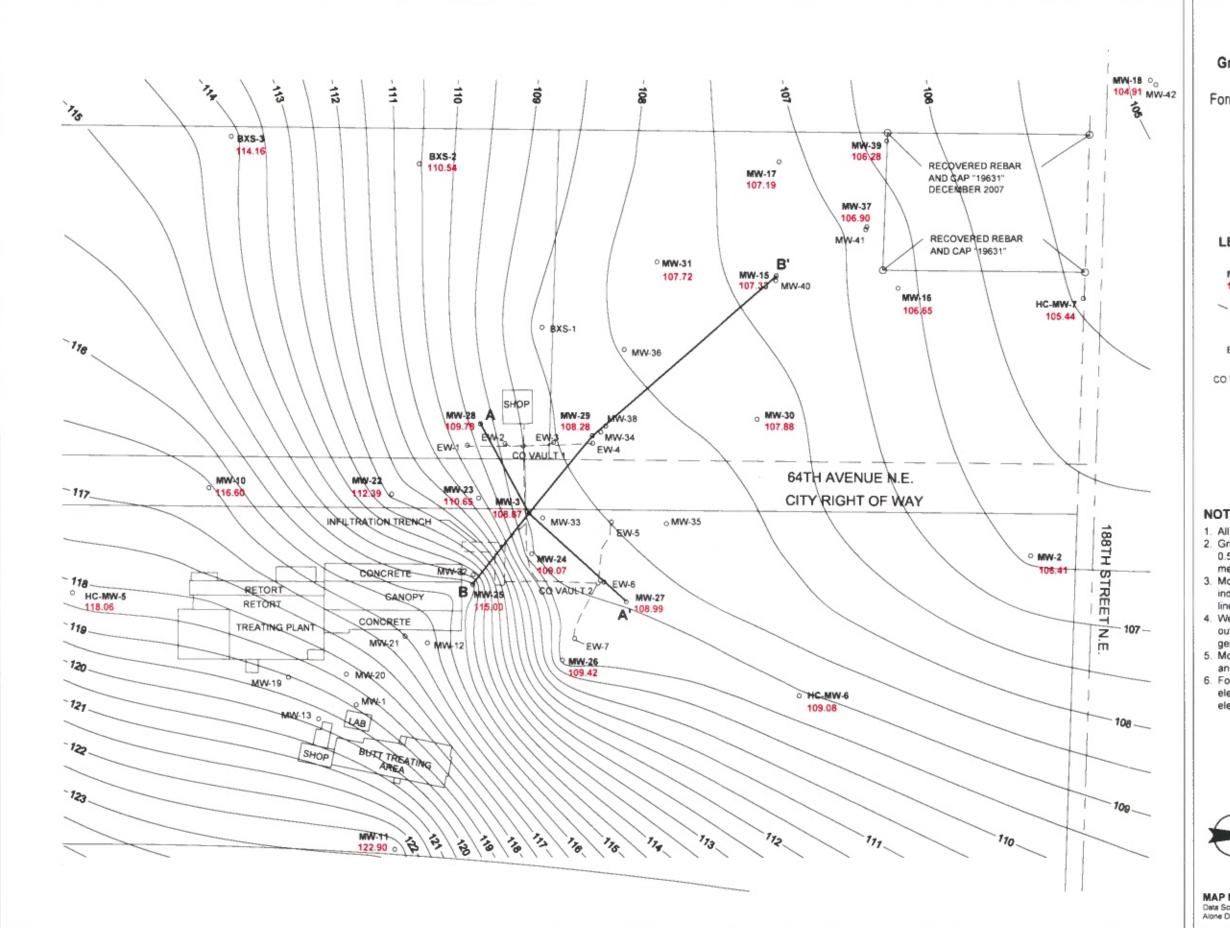




MAP NOTES:

Data Sources Geomatrix, Appendix C, Stand-Alone Data Document (2014), December 2014





AUGUST 16, 2010 **Groundwater Elevation Contour Map Baseline Elevations**

Former J.H. Baxter Wood Treating Facility Arlington, Washington

LEGEND

Monitoring Well Identification and MW-15 Groundwater Elevation (ft.) 104.72

Groundwater Elevation Contour (ft.)

0 Extraction Well Identification EW-1

CO VAULT 1 Clean Out Vault Identification

NOTES:

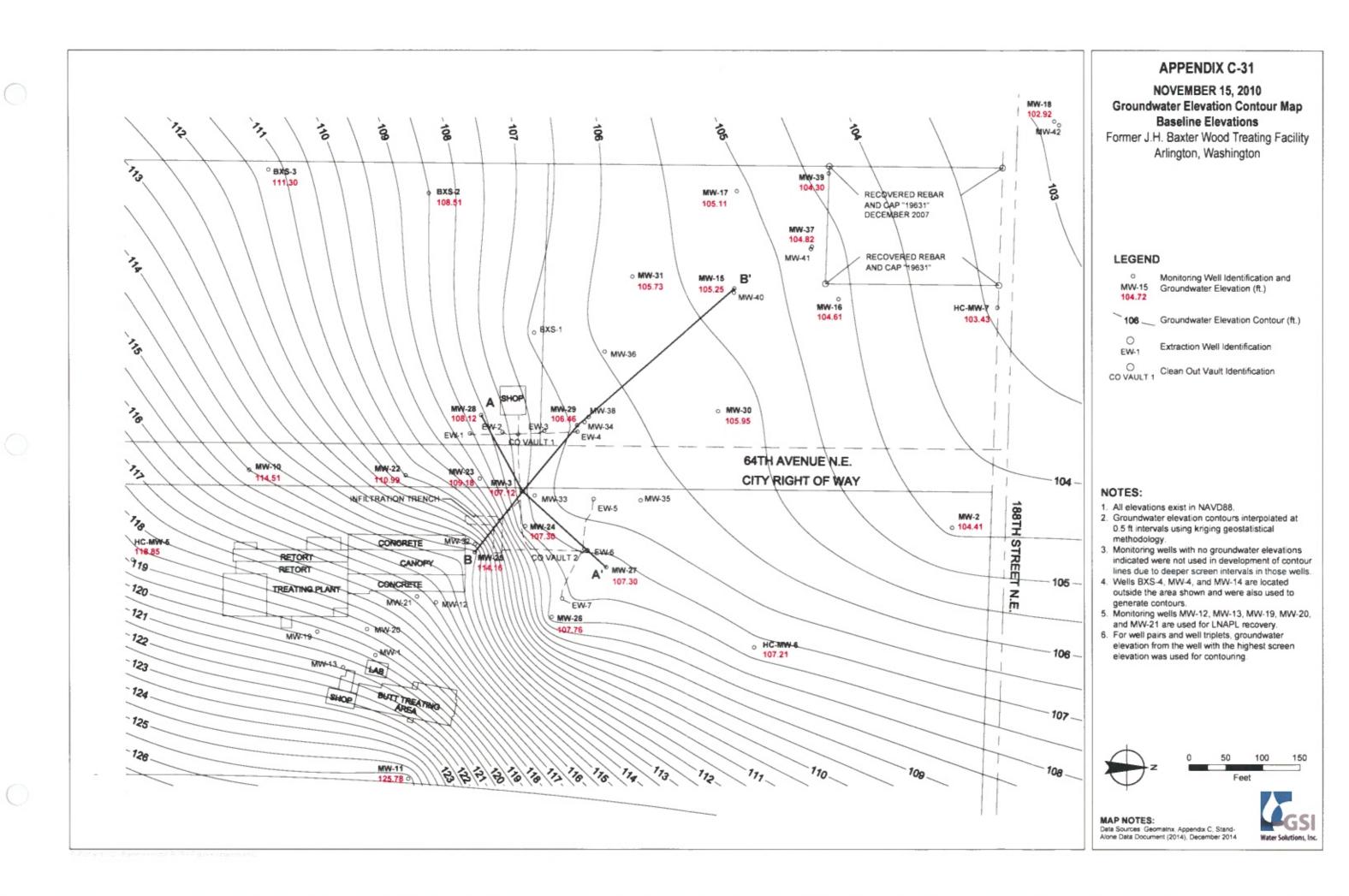
- 1. All elevations exist in NAVD88.
- 2. Groundwater elevation contours interpolated at 0.5 ft intervals using kriging geostatistical methodology.
- 3. Monitoring wells with no groundwater elevations indicated were not used in development of contour lines due to deeper screen intervals in those wells.
- 4. Wells BXS-4, MW-4, and MW-14 are located outside the area shown and were also used to generate contours.
- 5. Monitoring wells MW-12, MW-13, MW-19, MW-20, and MW-21 are used for LNAPL recovery.
- 6. For well pairs and well triplets, groundwater elevation from the well with the highest screen elevation was used for contouring.

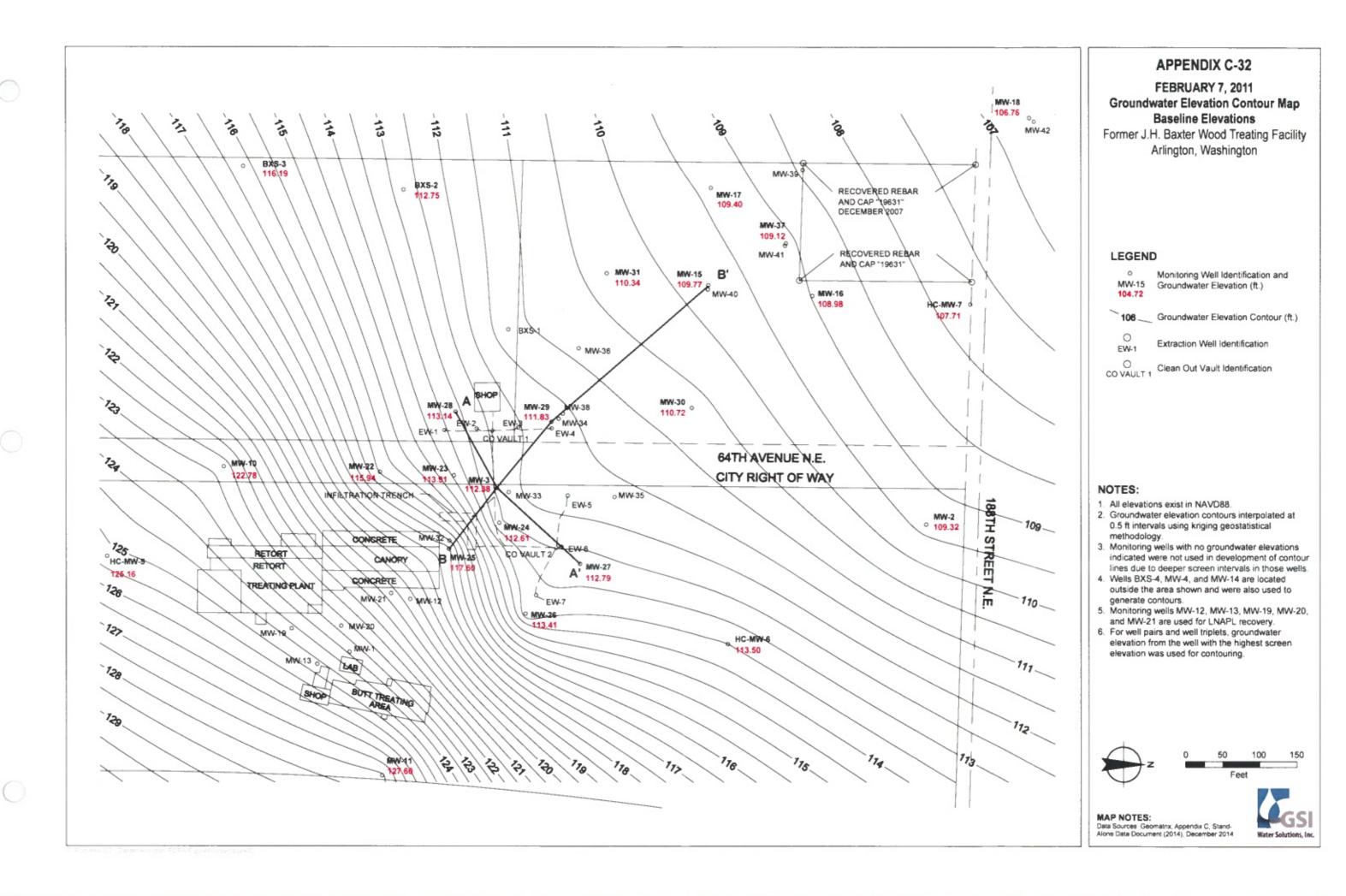


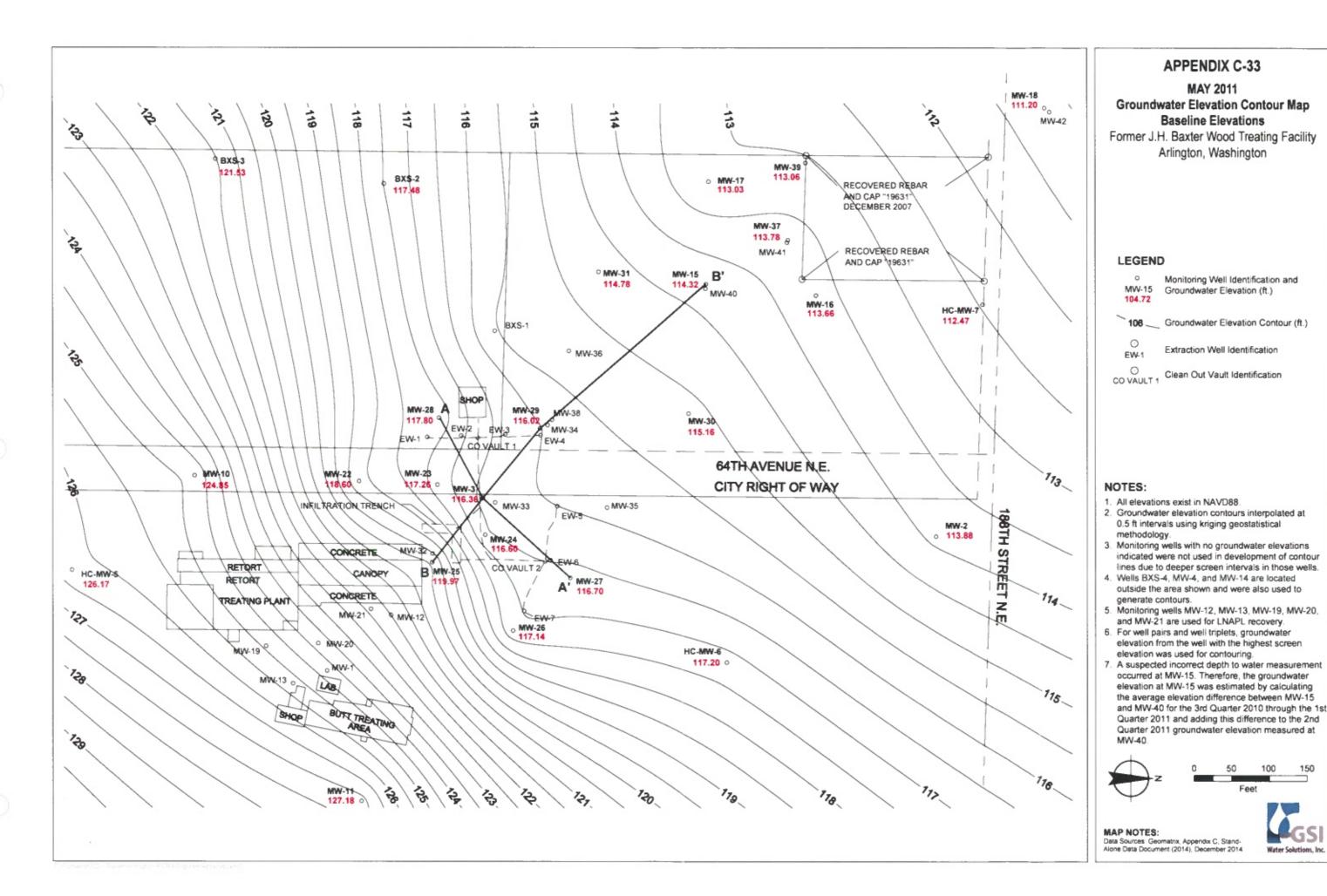


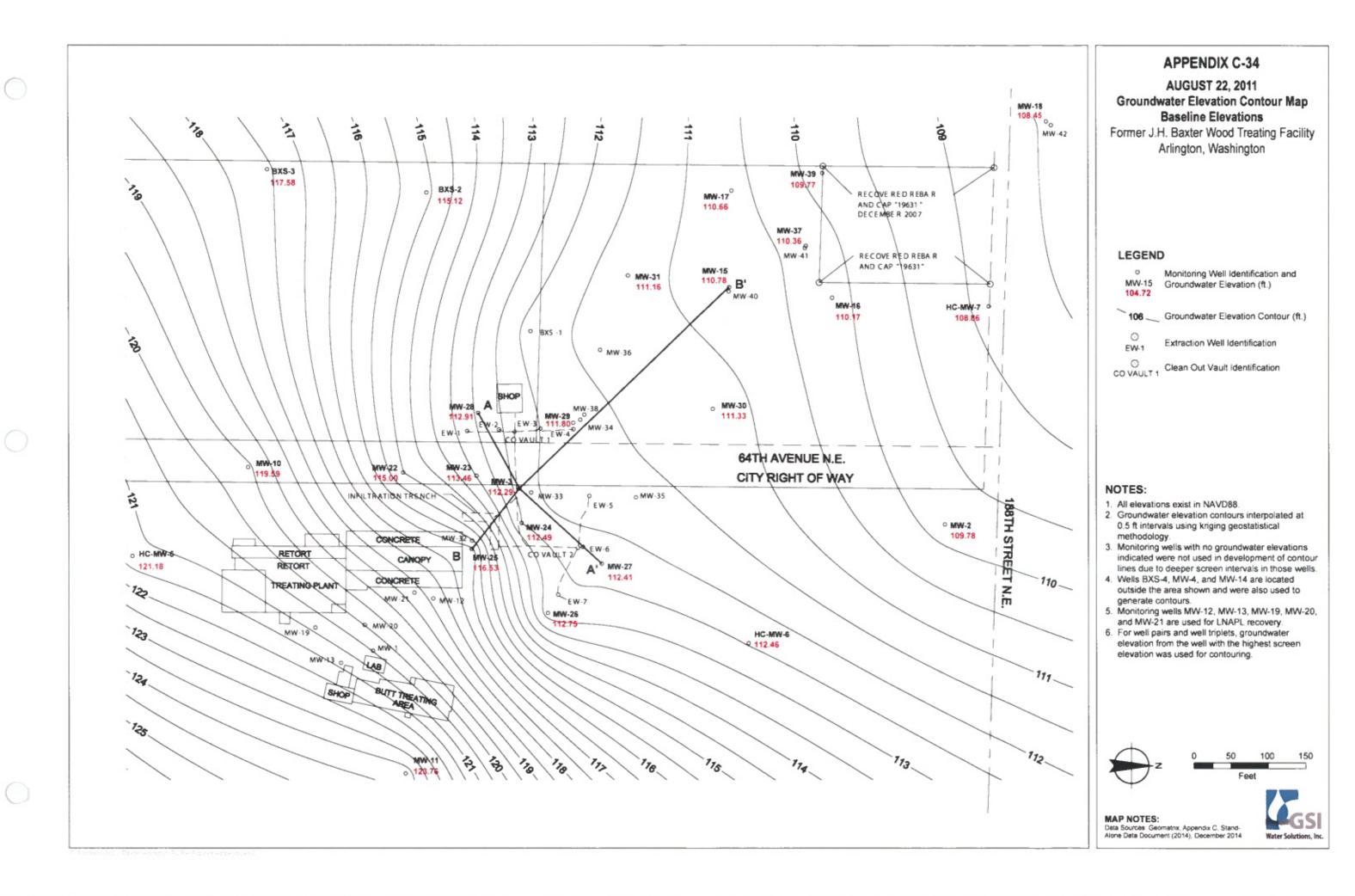
MAP NOTES:

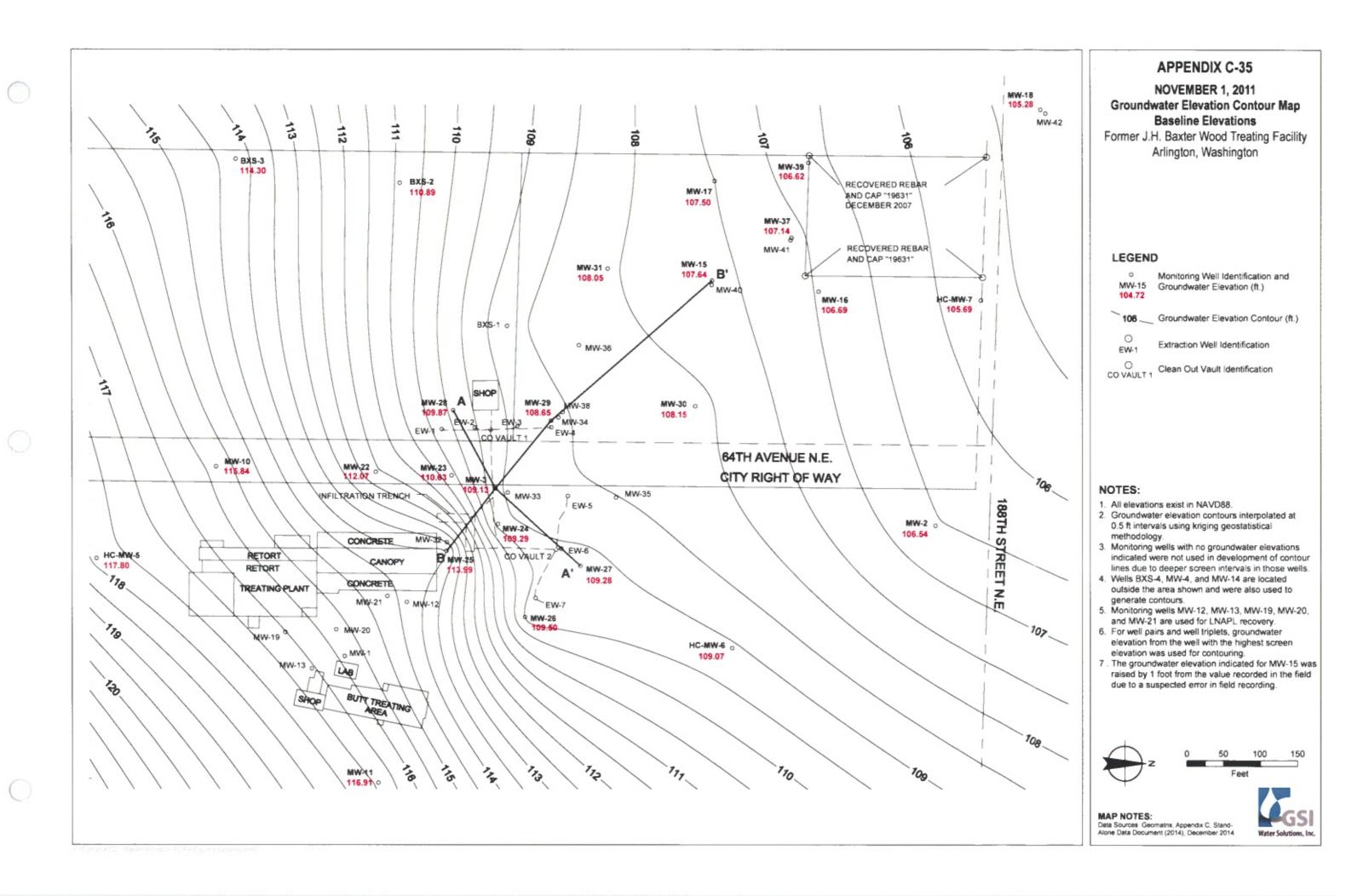
Data Sources: Geomatrix, Appendix C, Stand-Alone Data Document (2014), December 2014

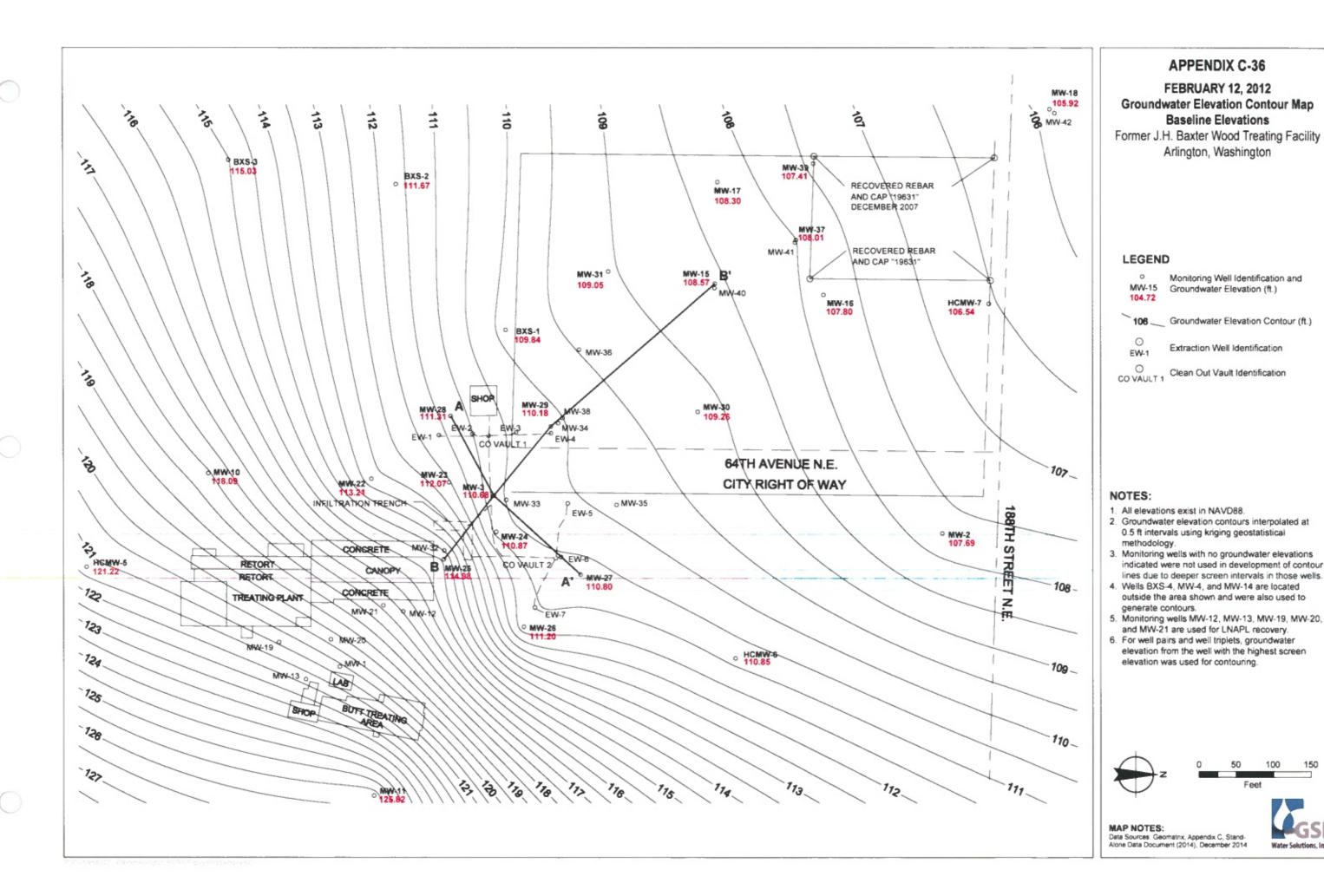


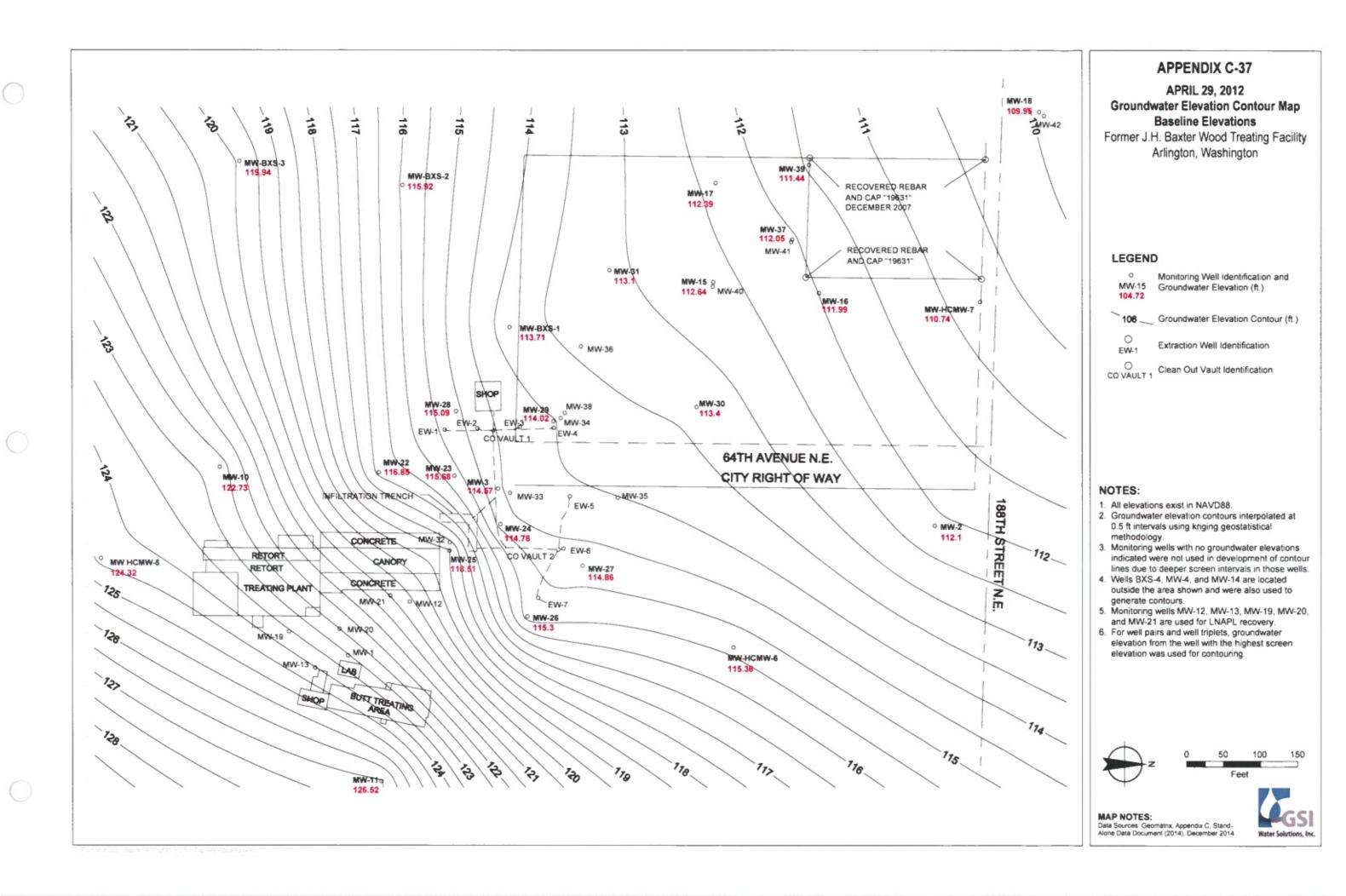


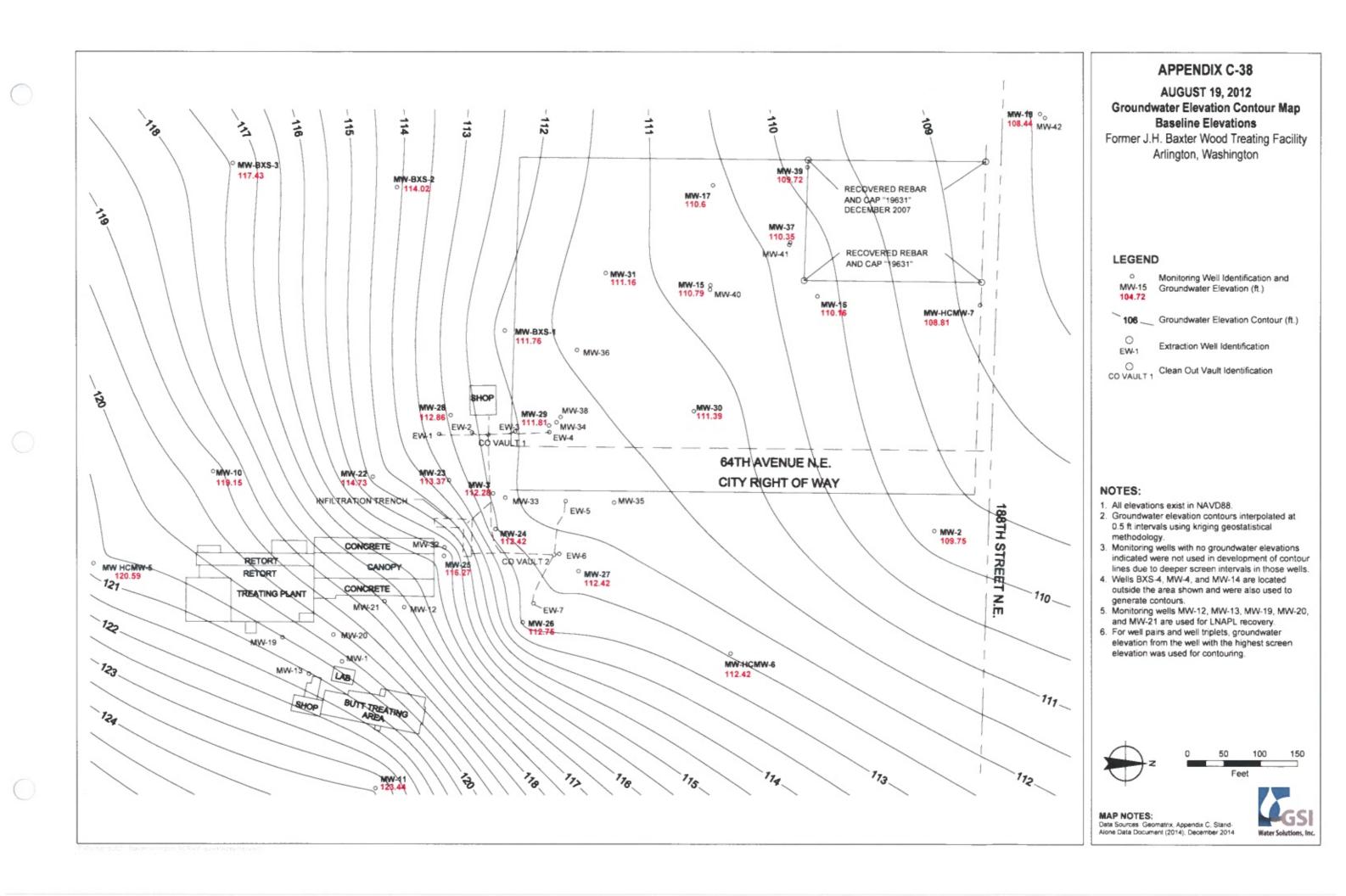


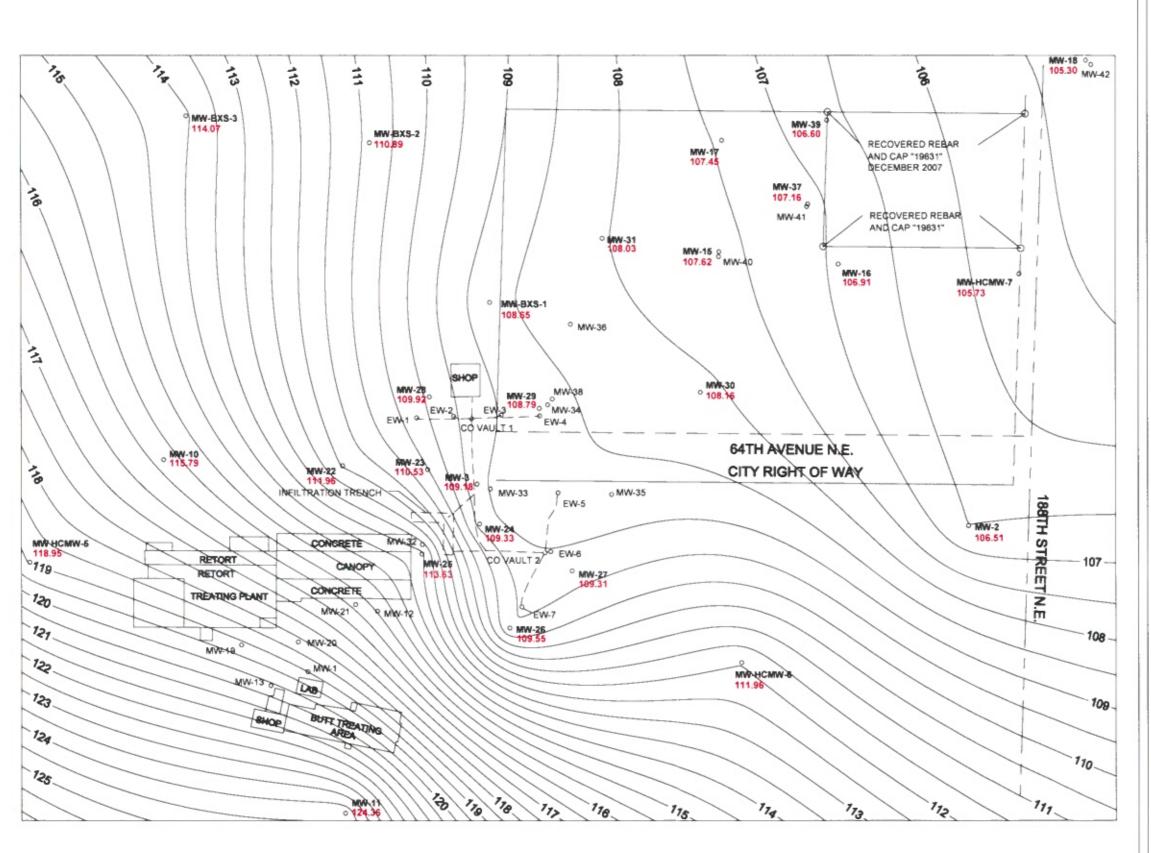












APPENDIX C-39

NOVEMBER 11, 2012 Groundwater Elevation Contour Map Baseline Elevations

Former J.H. Baxter Wood Treating Facility Arlington, Washington

LEGEND

Monitoring Well Identification and Groundwater Elevation (ft.)

106 __ Groundwater Elevation Contour (ft.)

Extraction Well Identification EW-1

O CO VAULT 1 Clean Out Vault Identification

NOTES:

- 1. All elevations exist in NAVD88.
- 2. Groundwater elevation contours interpolated at 0.5 ft intervals using kriging geostatistical methodology.
- 3. Monitoring wells with no groundwater elevations indicated were not used in development of contour lines due to deeper screen intervals in those wells.
- 4. Wells BXS-4, MW-4, and MW-14 are located outside the area shown and were also used to generate contours.
- 5. Monitoring wells MW-12, MW-13, MW-19, MW-20, and MW-21 are used for LNAPL recovery.
- 6. For well pairs and well triplets, groundwater elevation from the well with the highest screen elevation was used for contouring.

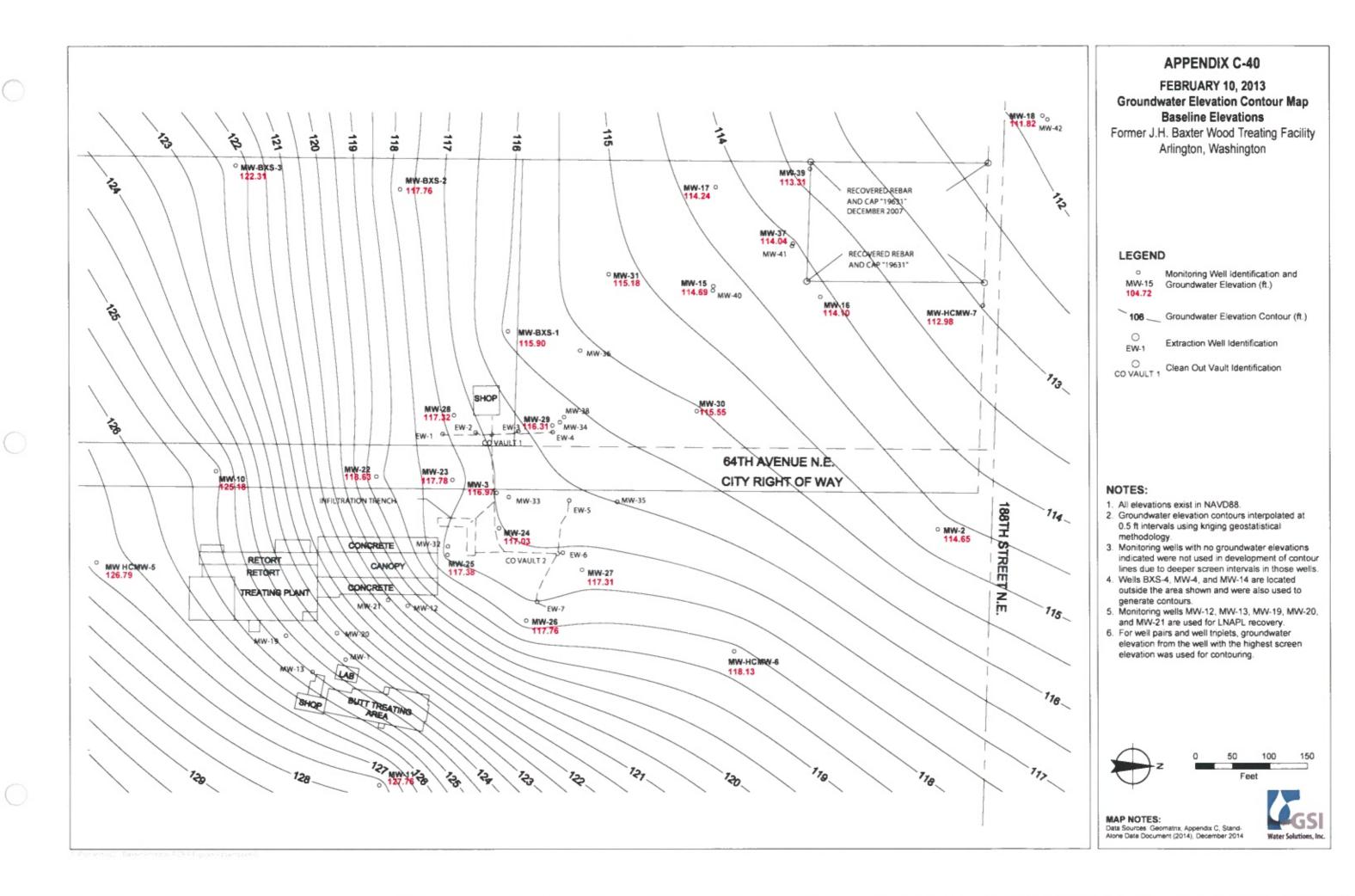


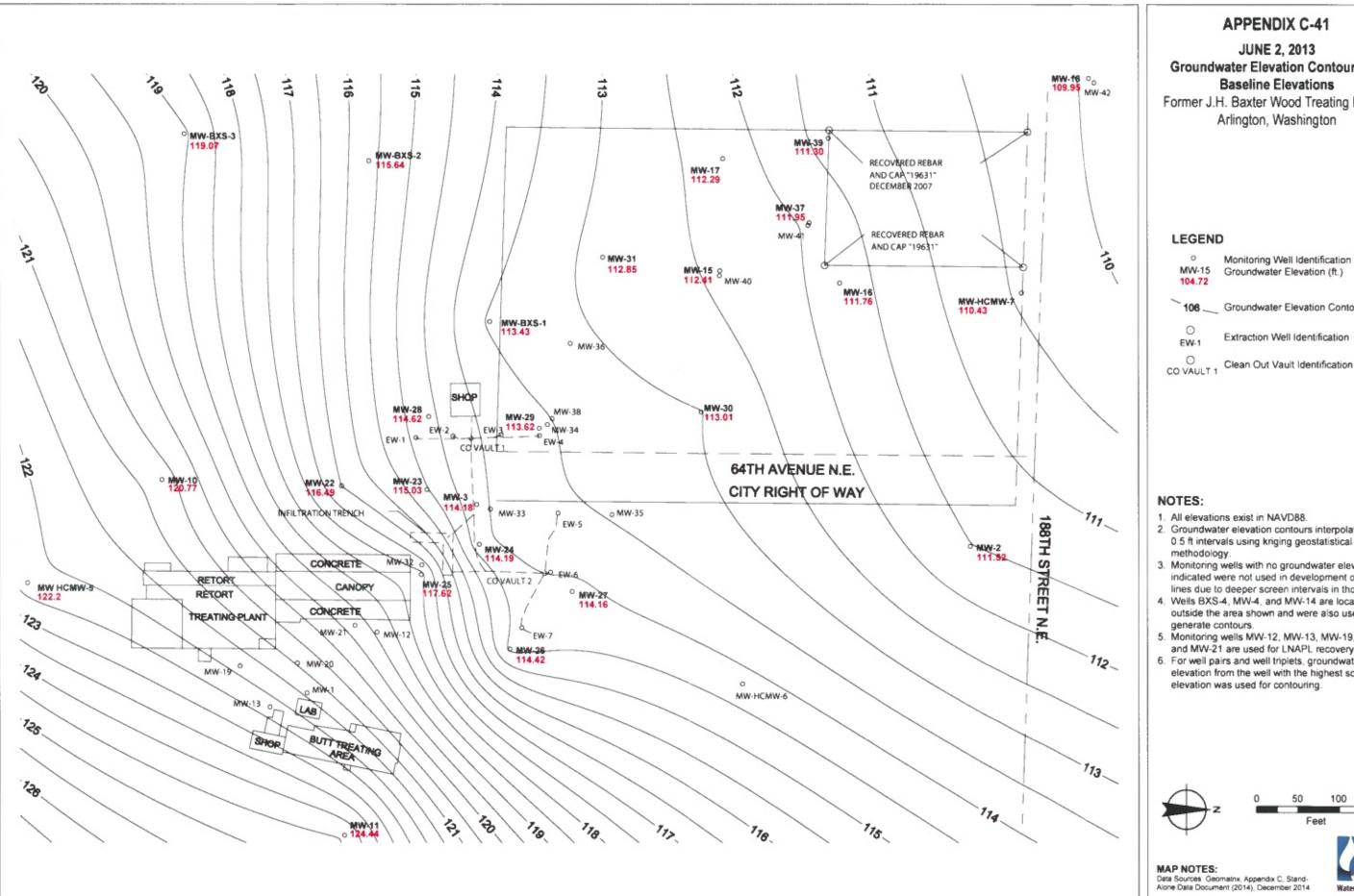


MAP NOTES:

Data Sources: Geomatrix, Appendix C. Stand-Alone Data Document (2014), December 2014







Groundwater Elevation Contour Map

Former J.H. Baxter Wood Treating Facility

Monitoring Well Identification and MW-15 Groundwater Elevation (ft.)

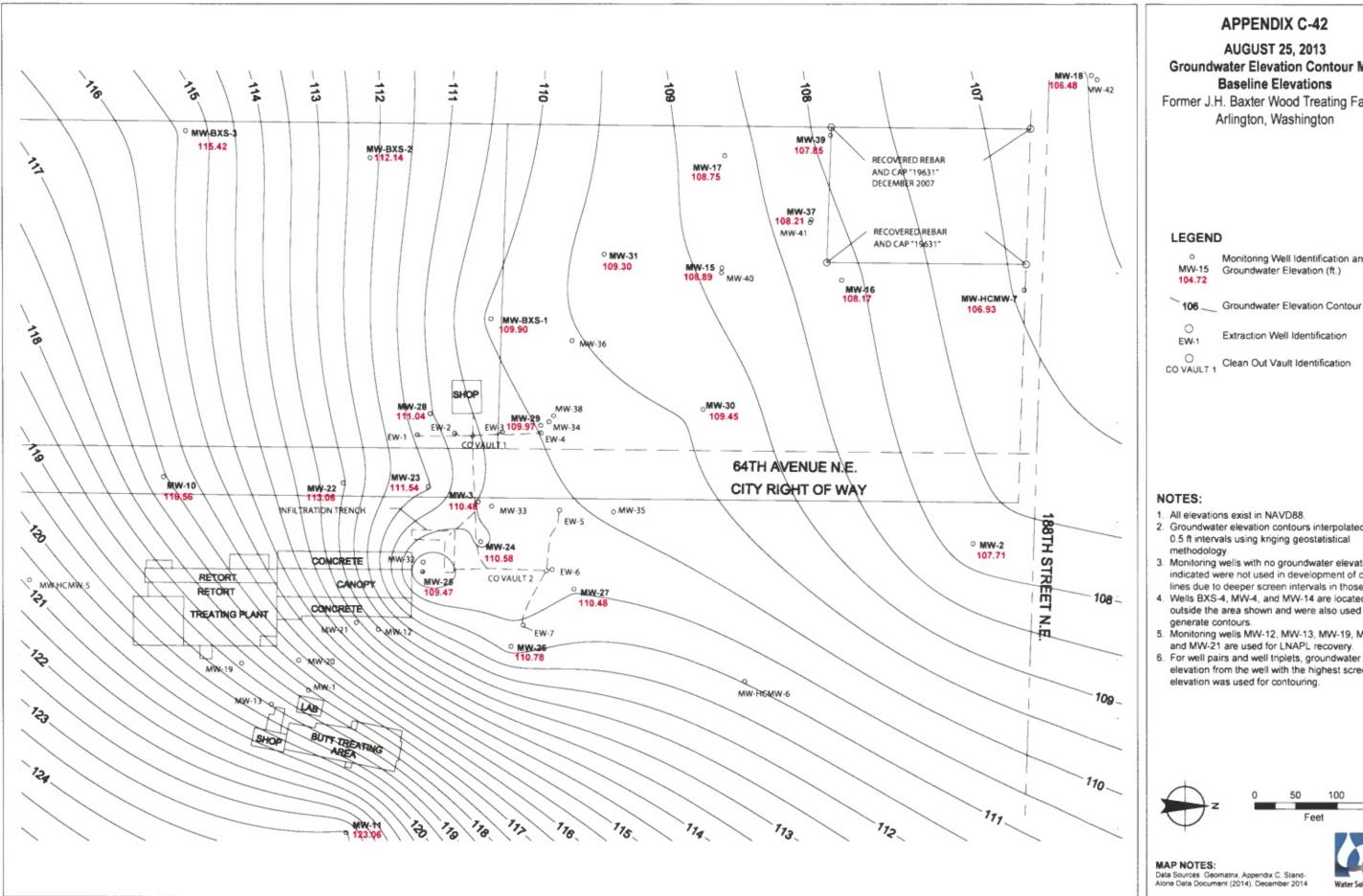
106 __ Groundwater Elevation Contour (ft.)

Extraction Well Identification

- 2. Groundwater elevation contours interpolated at 0.5 ft intervals using kniging geostatistical
- 3. Monitoring wells with no groundwater elevations indicated were not used in development of contour lines due to deeper screen intervals in those wells.
- 4. Wells BXS-4, MW-4, and MW-14 are located outside the area shown and were also used to
- 5. Monitoring wells MW-12, MW-13, MW-19, MW-20, and MW-21 are used for LNAPL recovery.
- 6. For well pairs and well triplets, groundwater elevation from the well with the highest screen elevation was used for contouring.







APPENDIX C-42

AUGUST 25, 2013 Groundwater Elevation Contour Map **Baseline Elevations**

Former J.H. Baxter Wood Treating Facility Arlington, Washington

Monitoring Well Identification and MW-15 Groundwater Elevation (ft.)

Groundwater Elevation Contour (ft.)

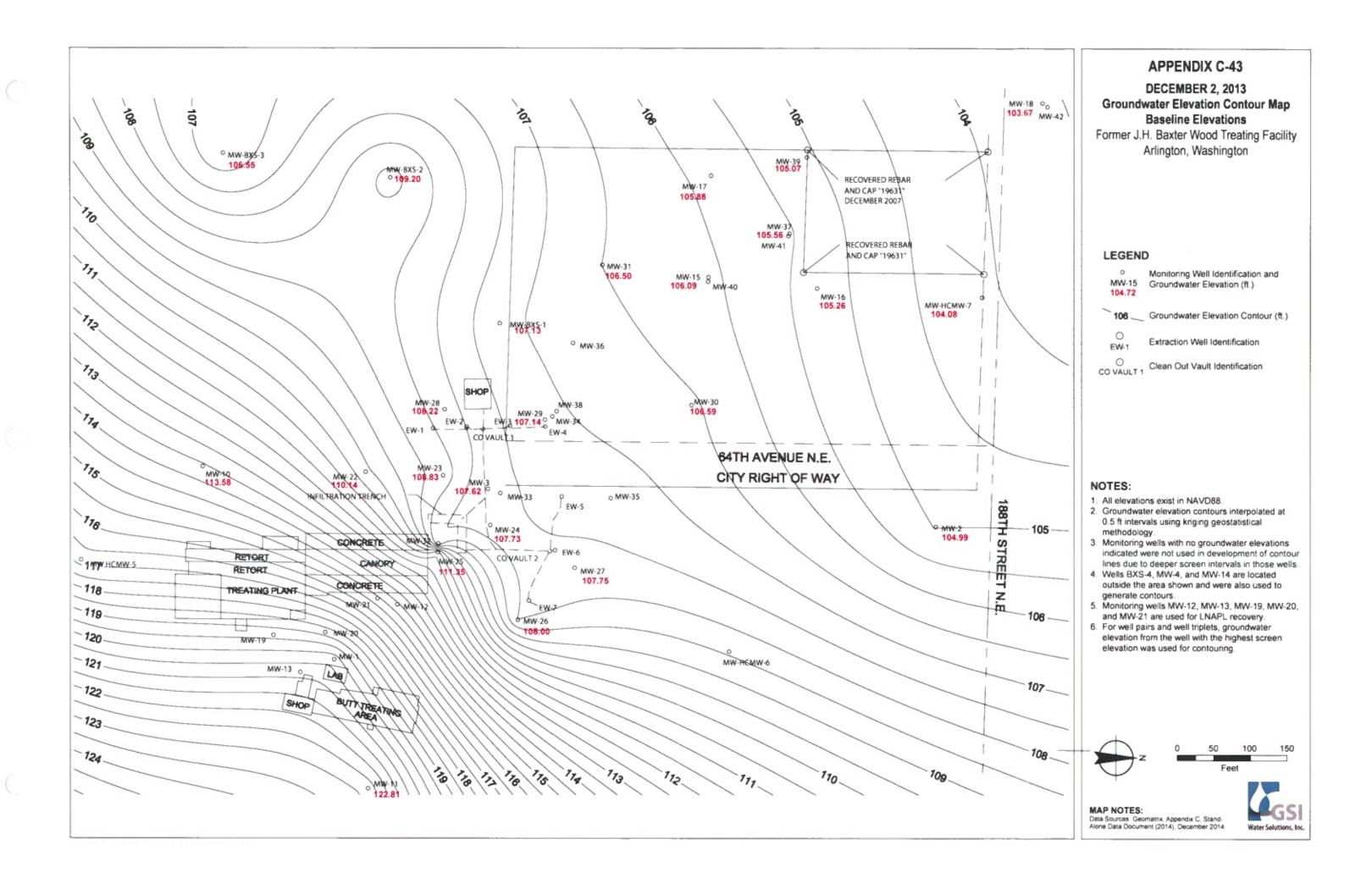
Extraction Well Identification

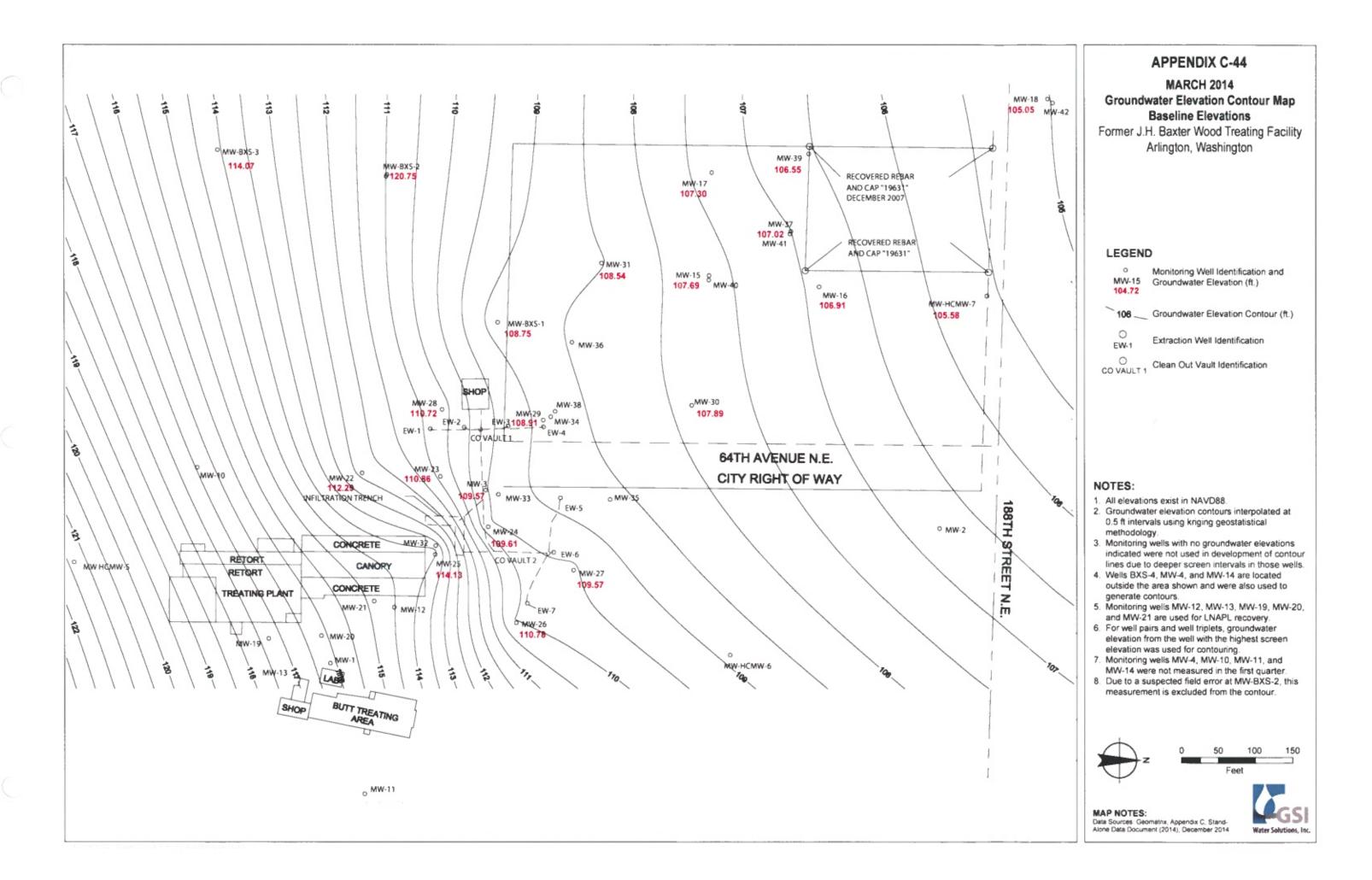
- 2. Groundwater elevation contours interpolated at 0.5 ft intervals using kriging geostatistical
- 3. Monitoring wells with no groundwater elevations indicated were not used in development of contour lines due to deeper screen intervals in those wells.
- 4. Wells BXS-4, MW-4, and MW-14 are located outside the area shown and were also used to
- 5. Monitoring wells MW-12, MW-13, MW-19, MW-20, and MW-21 are used for LNAPL recovery.
- elevation from the well with the highest screen elevation was used for contouring.

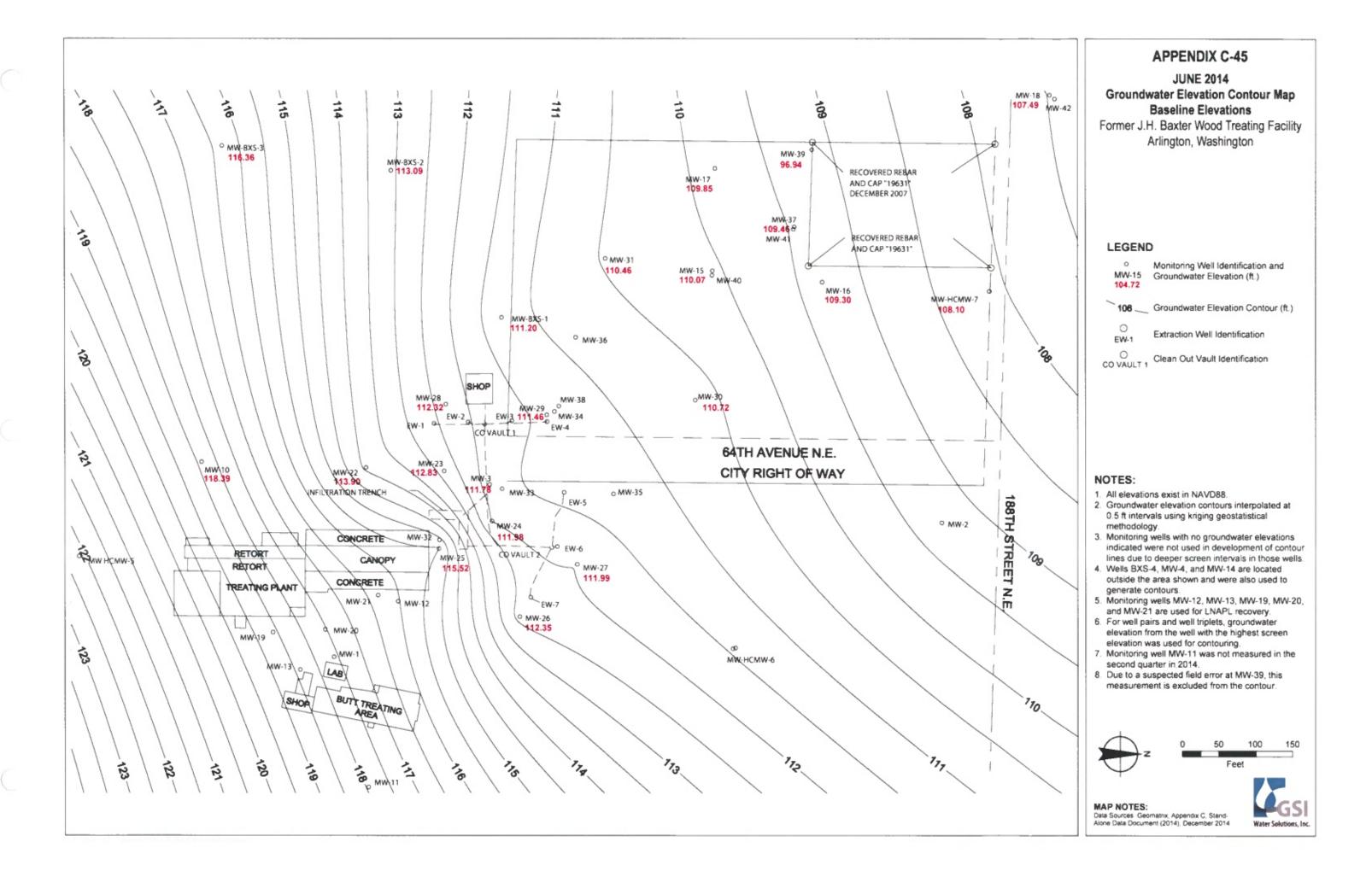


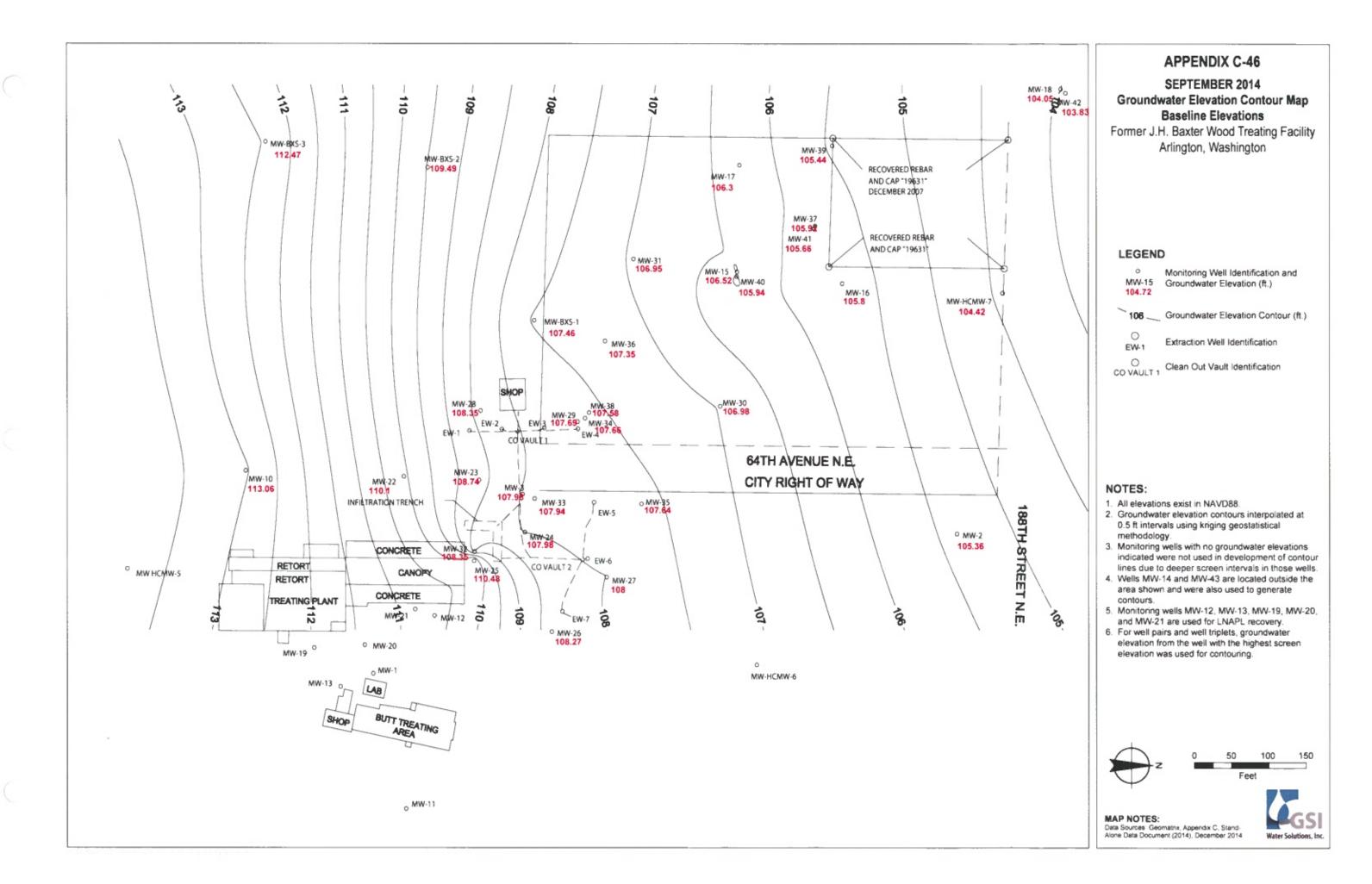
Data Sources Geomatrix, Appendix C, Stand-Alone Data Document (2014), December 2014













Groundwater Elevation Contour Map: Fourth Quarter 2014

Former J.H. Baxter Wood Treating Facility
Arlington, Washington

LEGEND

Groundwater Elevation Contours (dashed where inferred)

Shallow/Intermediate Monitoring Well (November 2014 Groundwater Elevation)

Extraction Well

Infiltration Trench

Infiltration Gallery Piping

NOTES:

- 1. All elevations exist in NAVD88.
- 2. Groundwater elevation measured at MW-16 not included in contours.



MAP NOTES:
Data: December 11, 2015
Data: Sources: AMEC, ESRI, Air photo taken on July 9, 2010 by Microsoft





Groundwater Elevation Contour Map: First Quarter 2015

Former J.H. Baxter Wood Treating Facility
Arlington, Washington

LEGEND

Groundwater Elevation Contours (dashed where inferred)

Shallow/Intermediate Monitoring Well (February 2015 Groundwater Elevation)

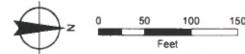
Extraction Well

Infiltration Trench

-- Infiltration Gallery Piping

NOTES:

- 1. All elevations exist in NAVD88.
- Extraction wells are pumping while water level measurements are collected. Wells pumping at time measurements taken?



MAP NOTES:
Date: December 11, 2015
Data Sources: AMEC, ESRI, Air photo taken on
May 2, 2015 by Google Earth





Groundwater Elevation Contour Map: Third Quarter 2015

Former J.H. Baxter Wood Treating Facility
Arlington, Washington

LEGEND

- Groundwater Elevation Contours (dashed where inferred)
- Shallow/Intermediate Monitoring Well (September 2015 Groundwater Elevation)
- Extraction Well
- Infiltration Trench
- ---- Infiltration Gallery Piping

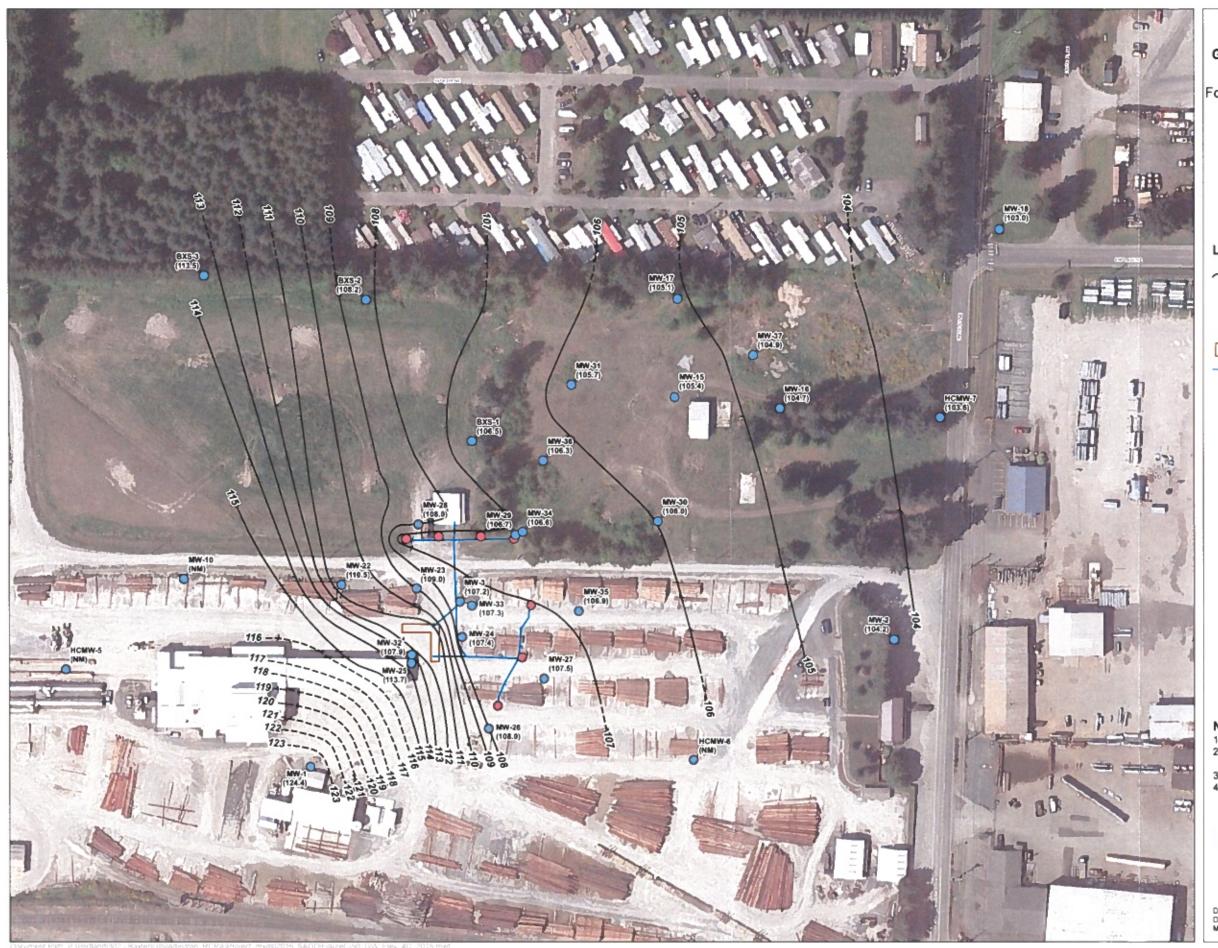
NOTES:

- 1. All elevations exist in NAVD88.
- Extraction wells are pumping while water level measurements are collected.
 MW-32 not used in contour map.



MAP NOTES:
Date: December 11, 2015
Date Sources: AMEC, ESRI, Air photo taken on
May 2, 2015 by Google Earth





Groundwater Elevation Contour Map: Fourth Quarter 2015

Former J.H. Baxter Wood Treating Facility
Arlington, Washington

LEGEND

Groundwater Elevation Contours (dashed where inferred)

Shallow/Intermediate Monitoring Well (December 2015 Groundwater Elevation)

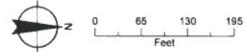
Extraction Well

Infiltration Trench

Infiltration Gallery Piping

NOTES:

- 1. All elevations exist in NAVD88.
 2. Extraction wells are pumping white water level measurements are collected.
 3. NM = not measured.
- 4. MW-32 not used in contour maps.



Date: December 15, 2016 Data Sources: AMEC, ESRI, Air photo taken on May 2, 2015 by Google Earth





Groundwater Elevation Contour Map: First Quarter 2016

Former J.H. Baxter Wood Treating Facility
Arlington, Washington

LEGEND

Groundwater Elevation Contours (dashed where inferred)

Shallow Monitoring Well (February 2016 Groundwater Elevation)

Intermediate Monitoring Well (February 2016 Groundwater Elevation)

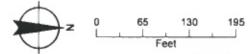
Extraction Well

Infiltration Trench

Infiltration Gallery Piping

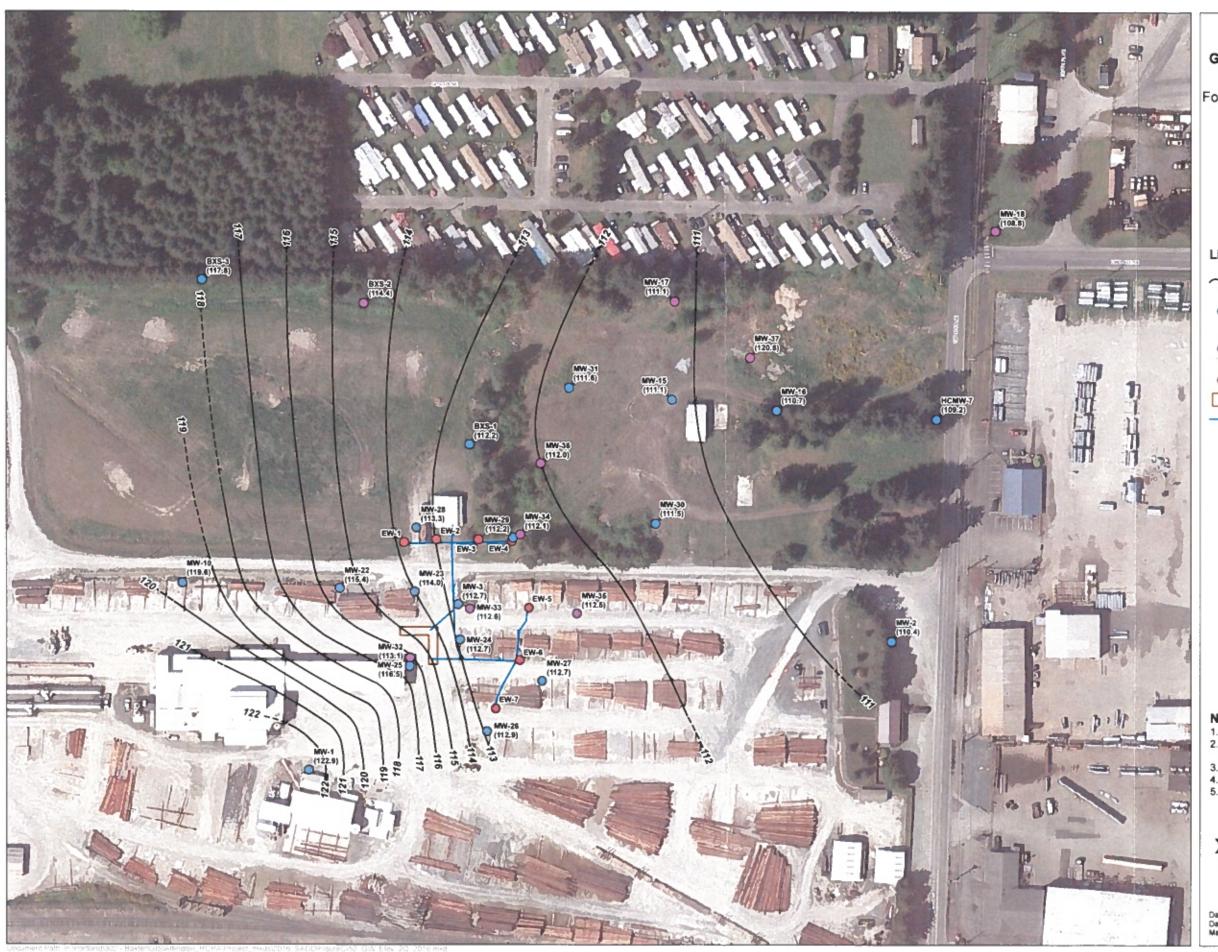
NOTES:

- 1. All elevations exist in NAVD88.
 2. Extraction wells are pumping while water level measurements are collected.
 3. NM = not measured.
- 4. MW-30, MW-32, and MW-37 not used for contouring.



Date December 15, 2016
Data Sources AMEC, ESRI, Air photo taken on May 2, 2015 by Google Earth





Groundwater Elevation Contour Map: Second Quarter 2016

Former J.H. Baxter Wood Treating Facility Arlington, Washington

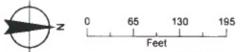
LEGEND

- Groundwater Elevation Contours (dashed where inferred)
- Shallow Monitoring Well (June 2016 Groundwater Elevation)
- Intermediate Monitoring Well (June 2016
 Groundwater Elevation, not used for contouring)
- Extraction Well
- Infiltration Trench
- Infiltration Gallery Piping

NOTES:

- All elevations exist in NAVD88.
 Extraction wells are pumping while water level measurements are collected.

 3. NM = not measured.
- 4. MW-37 suspect measurement.
- 5. Intermediate Monitoring Wells not used for contouring.



Date: December 15, 2016
Date: Sources: AMEC, ESRI, Air photo taken on May 2, 2015 by Google Earth





Groundwater Elevation Contour Map: Third Quarter 2016

Former J.H. Baxter Wood Treating Facility
Arlington, Washington

LEGEND

Groundwater Elevation Contours (dashed where inferred)

Shallow Monitoring Well (September 2016 Groundwater Elevation)

Intermediate Monitoring Well (September 2016 Groundwater Elevation)

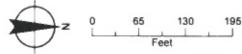
Extraction Well

Infiltration Trench

- Infiltration Gallery Piping

NOTES:

- All elevations exist in NAVD88.
 Extraction wells are pumping while water level measurements are collected.
- Intermediate wells not used for contouring.
 NM = not measured.

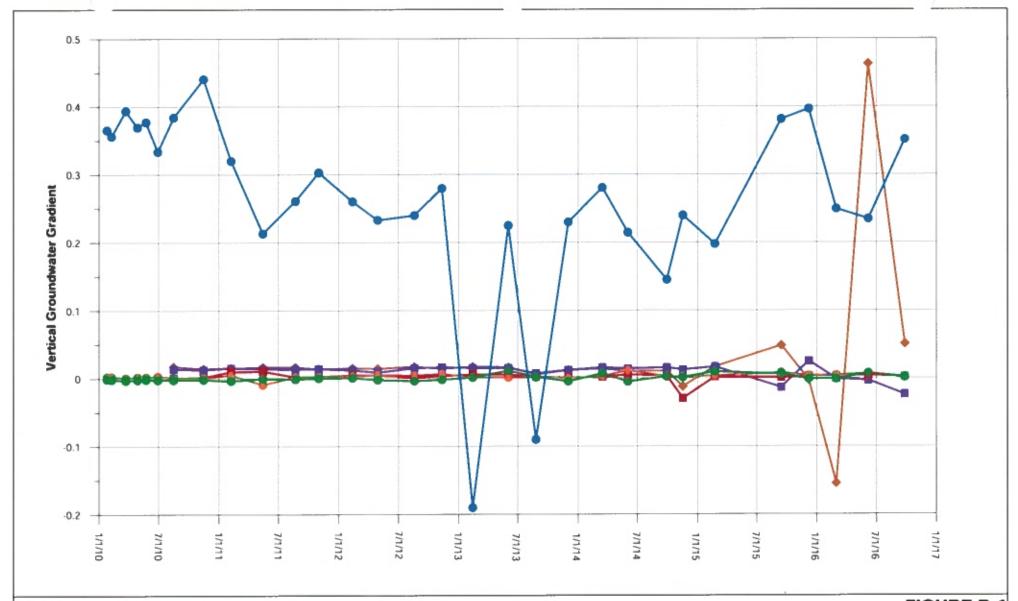


Date December 15, 2016
Data Sources AMEC, ESRI, Air photo taken on May 2, 2015 by Google Eerth



Appendix D

Groundwater Gradient Trends





MW-25/MW-32, Shallow to Intermediate Zone

MW-3/MW-33, Shallow to Intermediate Zone

MW-29/MW-34, Shallow to Intermediate Zone

MW-29/MW-38, Shallow to Deep Zone

MW-15/MW-40, Shallow to Deep Zone

MW-37/MW-41, Intermediate to Deep Zone

Notes:

Vertical groundwater gradients are dimensionless.

Positive values indicate a downward flow direction, while negative values indicate an upward flow direction. In the vicinity of MW-25 and MW-32, a silt layer is approximately 20' below ground surface, and could account for larger vertical gradient.

1Q 2013 and 3Q 2013, the MW-25/MW-32 vertical gradient shifted from a downward gradient to upward gradient. The associated O&M reports cited numerous high level alarm errors during the 1Q 2013 period that shut the extraction system down, and possible human error as reasons for the change.
Suspect measurement at MW-37 in 2Q 2016.



Vertical Groundwater Gradient Trends

Former J.H. Baxter Wood Treating Facility Arlington, Washington

